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USAAVLABS TECHNICAL REPORT 66-46

UH-1B HELICOPTER FLIGHT LOADS INVESTIGATION PROGRAM

Engineering Laboratory Report

May 1966

By

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U. S. ARMY AVIATION MATERIEL LABORATORIES

FORT EUSTIS, VIRGINIA

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SUMMARY

A 219-hour statistical sample of data was collected from four UH-1B helicopters performing normal field mission assignments covering a period of 3 months.

The parameters monitored were: airspeed, altitude, outside air temperature, acceleration at the aircraft center of gravity, main rotor rpm, collective stick position, longitudinal cyclic stick position, and engine torque. Supplementary information for each flight included barometric pressure, type of mission, and aircraft gross weight.

The data are presented as frequency-of-occurrence histograms, exceedance curves, and gust spectra. These figures and curves may be used to establish design criteria for new helicopters and for modification of design criteria for existing aircraft.

FOREWORD

The material presented in this report is the result of a joint endeavor by the United States Army Aviation Materiel Laboratories (USAAVLABS), Fort Eustis, Virginia, and Technology Incorporated, Dayton, Ohio. The program was sponsored by the Aeromechanics Division and was performed by the Engineering Laboratories Division of USAAVLABS, and the data were collected and reduced by Technology Incorporated.

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SYMBOLS

		Computer Equivalent
A_D	rotor disk area, ft^2	
C_T	thrust coefficient	CT
$\bar{c}$	mean aerodynamic chord, ft	
g	acceleration due to gravity, 32.174 ft/sec^2	
h_d	density altitude, ft	
K_g	gust factor, defined as follows: $K_g = \frac{0.88\,\mu_g}{5.3 + \mu_g}$	
m	lift curve slope (per radian)	
n_z	normal load factor	NZ
OAT	outside air temperature, ^oF.	
P_a	static pressure, inches of mercury	
R	rotor radius, ft	
RPM	rotor rpm	
S	wing area, ft^2	
U_{d_e}	derived gust velocity, ft/sec	
V	indicated airspeed, ft/sec	
V_e	equivalent airspeed, kn	

		Computer Equivalent
W	gross weight, lb	
Δn_z	incremental load factor = n_z - 1.0	
μ	rotor tip speed ratio	MU
μ_g	$\frac{2W/\rho_o}{m \times \sigma \times \bar{c} \times S \times g}$	
ρ	local air density, slugs/ft^3	
ρ_o	sea level density = .0023799 slug/ft^3	
σ	rotor solidity ratio	S
Ω	angular rotation in radians/sec	

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INTRODUCTION

The United States Army Aviation Materiel Laboratories (USAAVLABS) is engaged in basic research involving the adequacy of structures of U. S. Army aircraft. In order to provide designers with the load spectra experienced by operational aircraft, it was necessary to begin a flight loads investigation program. USAAVLABS performed this task for UH-1B aircraft under simulated combat conditions.

The operational characteristics of the UH-1B are analyzed in the 219-hour statistical sample of data compiled in this report. Parameters measured included airspeed, altitude, outside air temperature, acceleration at the aircraft center of gravity, main rotor rpm, collective stick positions, longitudinal cyclic stick position, and engine torque. Supplementary information for each flight consisted of gross weight, type of mission, and barometric pressure. An airborne oscillographic recorder system was utilized to obtain the data.

The data from each flight were classified as belonging to one of the following four mission segments: ascent, descent, maneuvering, or steady state. By grouping and correlating the various parameters with the supplemental information provided, it was possible to generate exceedance curves, histograms, and gust spectra to provide guidelines for aircraft design.

Comparison of the gust response of the UH-1B helicopter to that of the OV-1A fixed-wing aircraft indicated that perhaps a theoretical gust factor for helicopters could be related to derived gust velocities for fixed-wing aircraft. This gust analysis was conducted by Technology Incorporated.

OBJECTIVES

The primary objectives of this program were:

1. To provide operational data for establishing future helicopter design criteria.

2. To accumulate a minimum statistical sample of 200 flight hours of valid UH-1B operational data.

3. To present this information in a form for use by aircraft designers depicting U. S. Army field usage.

4. To perform limited preliminary analysis of these results.

5. To recommend any further testing which is indicated as necessary by preliminary analysis.

METHOD

DATA RECORDING

Four UH-1B helicopters, assigned to the 229th Assault Helicopter Battalion of the 1st Cavalry Division - Airmobile (formerly 11th Air Assault Division), were instrumented during the program: two in August 1964, one in December 1964, and one in March 1965. The recorded helicopter flights took place in the vicinity of Lugoff, South Carolina, during the Air Assault II Exercises from September through November 1964, and in the vicinity of Fort Benning, Georgia, during routine training and field maneuvers from October 1964 through May 1965. The instrumentation systems were removed from two of the helicopters in May 1965 and from the remaining two helicopters in June 1965. Reducible data were recorded for a total of 219 flight hours and 758 flights.

The data recording systems consisted of a Century 409B oscillograph recorder, a B&F bridge balance box, an auxiliary control box, two pressure transducers, a linear accelerometer, two stick position transducers, an outside air temperature (OAT) thermometer, and a torque pressure transducer.

A block diagram of the UH-1B recording system is illustrated in Figure 1. Figures 2 and 3 are photographs of the oscillograph recorder and the UH-1B.

DATA PROCESSING

Data Editing Procedures

The helicopter data records were edited with regard to two major points: maneuver loads and gust loads. The records were timed and the mission segments were marked.

Mission Segment 1: Takeoff and Ascent
Mission Segment 2: Maneuvering
Mission Segment 3: Descent, Flare, and Landing
Mission Segment 4: Steady State

The first three mission segments comprised the transient portion of the flight. During this portion there was no obvious steady value of the stick positions about which the stick traces seemed to deviate. This portion was also characterized by frequent changes in the airspeed and altitude traces. Mission Segment 1 (Takeoff and Ascent) included the takeoff and climb to steady flight or maximum altitude and all unsteady ascents. Mission Segment 2 (Maneuvering) consisted of any transient areas during the flight which did not fall into one of the other mission segments. The normal acceleration trace was usually quite active during this mission segment. Mission Segment 3 (Descent, Flare, and Landing) included the unsteady part of descent, flare, and landing. Mission Segment 4 (Steady State) was defined as the portion of the flight in which the stick traces had a relatively steady value and the airspeed and altitude traces were steady or changing smoothly. This included cruising, hovering, steady climb, and steady descent.

The load factor trace was edited for identification of peaks as either gust or maneuver. The maneuver peaks are those which were preceded by a movement of either or both control sticks. To form a peak, the load factor trace had to rise and fall 50 percent of the peak value, or 0.2g, whichever was greater, and the peak had to be outside the threshold. The actual threshold for load factor peaks is 0.8 to 1.2g factors. During the editing and reading, this threshold was replaced by one with load factors of 0.84g and 1.16g to assure that all peaks were obtained. The processing in the computer eliminated all readings within the active threshold.

Longitudinal cyclic and collective stick position peaks were also marked during the data editing. The peak criteria for these traces required that there be a rise and fall of 10 percent of full stick travel and that the peak values be at least 10 percent above or below the normal values. These normal values depended on the mission segment. For the steady-state mission segment, the normal values were the steady values of the stick positions immediately prior to and after the peak value. During the transient mission segments (when there were no "steady" stick positions), an arbitrary set of normal values was chosen to approximate the stick positions during hover. These values are listed by aircraft serial number below:

Aircraft No.	Longitudinal Cyclic Normal, Pct	Collective Normal, Pct
025	57.4	51.6
539	52.0	44.8
546	54.0	49.0
985	49.2	44.9

In addition to the marking of load factor and stick position peaks, all other traces were marked during the data editing for subsequent reading. During the transient mission segments, all parameters except the steady stick positions were marked at each load factor and stick position peak. Because of the transient nature of this portion of flight, no elapsed time was associated with these readings, and the parameter values were used only for tabulations of the peak values. However, during the steady-state mission segment, the traces for all parameters except normal load factor were marked to permit time history sampling of each of the parameters. By reading in this manner, elapsed time at each steady-state flight condition was recorded in tabular form, and the steady-state parameter values needed for the tabulations of the peak values were also obtained.

Data Reading and Quality Control

The data points were read, or measured, using semiautomatic oscillogram readers, and the readings were punched directly on cards. After all readings for a flight were taken, the cards were listed, and this printout was given a preliminary check and sent to Quality Control. In Quality Control, a sample of the readings from each flight was remeasured by hand and compared with the readings on the cards. This comparison and the mean and standard deviation of the reading deviations were used to measure and control the processing accuracy, using standard quality control techniques. All flights with unacceptable reading accuracy were reread. Throughout the program, this procedure forced the reading accuracy to conform to the desired level, because it required a uniform method of interpretation and measurement of the traces. (The level of reading accuracy is given in the data presentation section of this report.)

Data Computations

The normal load factor, n_z, is read directly from the normal acceleration trace. For convenience of presentation of positive and negative peaks, an incremental normal load factor, Δn_z, was calculated for each n_z peak using the relation

$$\Delta n_z = n_z - 1.0. \qquad (1)$$

The altitude values presented in the data are "density altitudes", which is the form normally used in specifying helicopter performance. The density altitude, h_d, was calculated from the static pressure, P_a, and outside air temperature, OAT, from the equation

$$h_d = 145,300 \left[1 - \left(\frac{518.4\, P_a}{29.92\, OAT \pm 13,745.2} \right)^{0.235} \right]. \quad (2)$$

Calibrated airspeed can be calculated from indicated airspeed by applying an instrument installation correction. Because this correction is normally small (less than 4.6 knots for airspeeds below 110 knots), and because it depends on the thrust condition of the rotor (in ground effect, hover, full power climb, etc.), it was decided that such a correction would not substantially increase the accuracy of the airspeed. Therefore, only indicated airspeeds are presented in this report.

The engine torque transducer was originally calibrated in psig using the UH-1B cockpit torquemeter. Later in the program, a conversion factor for changing torquemeter psig to pound-feet of engine output shaft torque was obtained from the engine manufacturer. The units used in the tabular presentation are psig, but the figures indicate torque in both sets of units (psig and pound-feet).

Rotor rpm and outside air temperature were calculated directly from the oscillogram traces using linear calibrations.

Collective and longitudinal stick positions were computed as a percent of full deflection. Deflections were measured from the full-forward position of the longitudinal cyclic stick and from the full-down position of the collective stick.

Rate of climb was determined by an approximate differentiation of the altitude trace. This computation was made continually during the steady-state mission segment and at each peak of the sticks or normal acceleration during the ascent, maneuvering, and descent mission segments.

The "longitudinal acceleration" or rate of change of airspeed was obtained by an approximate differentiation of the airspeed trace. This parameter was computed continually during steady state and only at the peaks during the transient mission segments.

Two nondimensional parameters, rotor tip speed ratio μ and the thrust coefficient C_T divided by the rotor solidity ratio σ, were calculated using the following relations:

$$\mu = \frac{9.5493\, V}{RPM \cdot R}, \quad (3)$$

where

V = indicated airspeed in feet per second

RPM = rotor rpm

R = rotor radius = 22.0 feet,

and $$\frac{C_T}{\sigma} = \frac{W}{\rho \pi R^2 (\Omega R)^2 \sigma} = \frac{91.1886\ W}{\rho A_D (RPM \times R)^2 \sigma}, \quad (4)$$

where

W = gross weight in pounds

ρ = local air density in slugs per cubic foot

A_D = rotor disc area = 1520.3 square feet

σ = rotor solidity ratio = 0.050648

Ω = angular rotation in radians per second.

RESULTS

DATA READING ACCURACY

As discussed in the data processing section of this report, the reading accuracy was continually checked during the program by a Technology Incorporated quality control procedure. In this procedure, the mean deviation and standard deviation of the reading errors were calculated for each processed flight. At the completion of the program, these statistical parameters were calculated for the entire data sample. Assuming a normal distribution of reading errors, 99.7 percent of the readings should be within three standard deviations of the true values. The mean deviation and three standard deviations for each parameter, assuming average calibration values, are shown in Table I.

TABLE I

QUALITY CONTROL VALUES FOR EACH PARAMETER

Parameter	Mean Deviation	Three Standard Deviations (99.7 Pct Accuracy Limit)
n_z, g	.0008	± .037
Airspeed, kn	.02*	± 3.7*
Altitude, ft	3.5**	± 93**
OAT, °F	.08	± 2.22
Torque, psi	.031	± .84
Rotor rpm	.12	± 3.2
Long. Cyclic Stick, pct	.16	± 3.1
Collective Stick, pct	.46	± 8.9

*Computed at 100 knots indicated airspeed.
**Computed at 1000 feet density altitude and standard temperature.

PRESENTATION OF DATA

A total of 219 hours of UH-1B flight time was processed and presented in this program. This time came from 758 separate flights and 410 engine starts and shutdowns (an engine run-up was not counted unless flight time was recorded). Thus, an average flight lasted for about 17.5 minutes, and there were 1.85 flights per engine run-up.

In the 219 hours of data, 59 autorotation landings were recorded. Of these, 58 were practice autorotations in which the pilot performed a simulated emergency landing resulting from an engine power failure. Two examples of practice autorotations are shown in the portions of oscillograms in Figure 4. These landings are readily recognizable because of the sudden drop in torque, the movement of the collective stick to the full-down position (an upward deflection of the trace), and a rapid decrease in altitude (also an upward deflection of the trace). Figure 5 is a reproduction of a portion of a UH-1B oscillogram containing a forced landing caused by an engine power failure. The power failure occurred at a pressure altitude of 2200 feet, an airspeed of 81 knots, a rotor rpm of 310, and an engine shaft torque level of 410 pound-feet. Within a second after the power failure, the pilot moved the collective stick to the full-down position. One second later he pushed the longitudinal cyclic stick forward about 7 percent from the full-forward position, and the normal acceleration reached a minimum of -0.82g (an n_z of 0.18). At 4 seconds after the power failure, the helicopter reached a maximum rate of descent of 4700 feet per minute and a minimum rotor rpm of 256. Very little airspeed was lost during this period. At approximately 15 seconds after power failure, the pilot had established a steady rate of descent of about 1900 feet per minute and a rotor rpm of 320. Forty-four seconds after power failure, the pilot began a flare by pulsing the collective stick through eight cycles, causing eight normal acceleration peaks of about 0.35g amplitude and 1-cycle-per-second frequency. The touchdown occurred 54 seconds after the power failure, with an impact normal acceleration of 0.99g (an n_z value of 1.99). The primary difference between this actual forced landing and the practice autorotation landings shown in Figure 5 is the collective stick pulsing motion as the pilot attempted to conserve the energy stored in tne rotor rotation and, at the same time, decrease his rate of descent. This pulsing was not used during the practice landings, because these pilots enjoyed the comfort of an idling engine in case it was required and a preselected landing spot for their simulated power failure.

The data on the flight profiles are presented in histogram form in Figures 6 through 21. Figure 6 shows the percentage of the total flight time (219 hours) spent in each of the four mission segments. Figures 7 through 10 present the percentage of the flight time in each gross weight

range spent in each mission segment. Each of these figures has a similar distribution, with about three-fourths of the time spent in the steady-state mission segment, except for the gross weight range above 8000 pounds (Figure 10). The small amount of time in this weight range is responsible for this difference.

Since the transient mission segments - ascent, maneuvering, and descent - did not contain any constant values of the parameters, no histograms of time spent in parameter ranges were prepared for these mission segments. Histograms showing the percentage of the steady-state mission segment time spent in ranges of gross weight, rotor rpm, engine torque, outside air temperature, altitude, rate of climb, and airspeed are presented in Figures 11 through 17. Figure 11 indicates that two-thirds of the time was recorded at weights between 6000 and 7000 pounds. The altitudes of the flights were normally low, with less than 4 percent of the time above 5000 feet. The rates of climb presented in Figure 16 indicate that only 5 percent of the time was spent at rates of climb or rates of descent greater or less than 500 feet per minute. Since this histogram does not include the transient mission segments, it does not include the extreme transient rates of climb experienced in autorotation and pull-up maneuvers.

Figure 17 is a histogram of the percentage of time spent in each airspeed range within the steady-state mission segment. This information is further broken down in Figures 18 through 21 to show individual airspeed histograms for each gross weight-altitude combination. These figures show that all indicated airspeeds over 115 knots were at density altitudes below 1000 feet.

Figures 22 through 29 present curves of the flight hours necessary to reach or exceed given levels of incremental maneuver normal load factor (Δn_z) in each mission segment and within each range of gross weights. Each figure contains two curves, one for positive load factor peaks and one for negative load factor peaks. The most severe positive load factor curve was recorded during the maneuver mission segment, while the most severe negative load factors were recorded during the descent mission segment. There is little difference in the load factor curves for the gross weight ranges except at the high weights (above 8000 pounds). The more severe curve in the high weight range is a false indication caused by the very small data sample (1/2 hour).

Figure 30 presents the composite exceedance curves for all the maneuver peaks. The positive peaks were slightly higher than the negative peaks and occurred about three times as often. The largest peak load factor in 219 hours of UH-1B data was between 2.0 and 2.2 (Δn_z was between 1.0 and 1.2). A tabulation and graph of the number of maneuver load

factor peaks distributed by load factor and tip speed ratio μ are presented in Figure 31. The shape of this distribution agrees with the expected distribution, having the largest peaks in the middle ranges of μ and having lower values at high tip speed ratios.

Figures 32 through 39 contain exceedance curves for positive and negative incremental gust normal load factors for each mission segment and each gross weight range. In general, the gust load factors are less severe than the maneuvers, especially at the higher load factors. It is also noteworthy that the positive and negative gust peaks are closely grouped on each figure, indicating the random nature of the turbulence.

Figure 40 contains the composite incremental gust normal load factor exceedance curves. The dashed curves in this figure are for the OV-1A data presented in USAAVLABS Technical Report 66-6, January 1966.* This figure indicates that the UH-1B helicopter experienced much lower turbulence loads than the OV-1A fixed-wing aircraft. This can be attributed to the higher alleviation of gusts by the more flexible rotor. A plot and tabulation of gust load factor peaks versus airspeed are included in Figure 41. As shown in this figure, the highest gust load factor was between 1.5 and 1.6 (Δn_z was between .5 and .6).

The tabulation of the 219 hours of UH-1B data is included in this report. Instructions for reading the parameter codes used in the computer output are included in Appendix I.

DATA ANALYSIS

Because of the obvious difference in the gust load factors between the UH-1B and the OV-1A, even though the aircraft were flown in the same turbulence environment, it was decided that an attempt should be made to evaluate the difference. The OV-1A gust spectrum was calculated from the equation

$$U_{d_e} = \frac{1.1850 \cdot W \cdot \Delta n_z}{m \cdot \rho_o \cdot S \cdot V_e \cdot K_g} \qquad (5)$$

where

U_{d_e} = derived gust velocity in feet/second

W = gross weight in pounds

*USAAVLABS Technical Report 66-6, OV-1A Mohawk Flight Loads Investigation Program, U. S. Army Aviation Materiel Laboratories, Fort Eustis, Virginia, January 1966.

Δn_z = incremental gust load factor = n_z - 1.0
m = lift curve slope (per radian) = 4.86
ρ_o = sea level density = .0023799 slug/feet^3
S = wing area = 330 feet^2
V_e = equivalent airspeed in knots
K_g = gust factor, defined as follows:

$$K_g = \frac{0.88\mu_g}{5.3 + \mu_g} \tag{6}$$

and

$$g = \frac{2W/\rho_o}{m \cdot (\rho/\rho_o) \cdot \bar{c} \cdot S \cdot g} \tag{7}$$

where

g = acceleration due to gravity = 32.174 feet/second^2
$\bar{c}$ = mean aerodynamic chord = 8.15 feet.

In Equation (5), it is possible to move all the aircraft configuration parameters to the left side of the equation:

$$m \cdot S \cdot K_g \cdot U_{d_e} = \frac{1.1850\ W \cdot \Delta n_z}{\rho_o \cdot V_e}. \tag{8}$$

The quantity on the left side of the equation is defined here as a "gust parameter". The right side of the equation can be evaluated for helicopter gust peaks in the same manner as for fixed-wing aircraft.

The quantity on the right side of the equation represents the change in total force on the rotor ($W \cdot \Delta n_z$) divided by the momentum of the free stream per unit volume ($\rho_o \cdot V_e$), and is measured in cubic feet per second. The above "gust parameter" was calculated for the UH-1B gust load factor peaks and was plotted versus nautical miles to reach or exceed derived gust velocities in Figures 42, 43, and 44, for the altitude ranges 0 to 1000 feet, 1000 to 2000 feet, and 2000 to 5000 feet, respectively. For later correlation, the gusts in the 6000-to-7000-pound and 7000-to-8000-pound gross weight ranges were separated into two curves. There were not enough peaks in the other gross weight ranges to provide valid curves.

The OV-1A gust spectra from USAAVLABS Technical Report 66-6, January 1966, were converted into nautical miles to reach or exceed the "gust parameter", using a K_g for an average gross weight of 13,200 pounds, and were plotted in Figures 42, 43, and 44.

Assuming that the turbulence environment was identical for the UH-1B and the OV-1A at each altitude level, the difference in the plotted gust parameters is caused by the quantity ($m \cdot S \cdot K_g$), which is called the "unit gust parameter" in this report. Using the OV-1A "gust parameter" as a base for calculation, the "unit gust parameters" were evaluated for the UH-1B from the relation

$$(m \cdot S \cdot K_g)_{\text{UH-1B}} = \frac{(m \cdot S \cdot K_g \cdot U_{de})\ \text{UH-1B}}{(m \cdot S \cdot K_g \cdot U_{de})\ \text{OV-1A}} (m \cdot S \cdot K_g)_{\text{OV-1A}} \cdot \qquad (9)$$

These "unit gust parameters" for the UH-1B were plotted in Figure 43 versus gross weight by altitude and by values of "gust parameter". A preliminary examination of this figure shows the "unit gust parameter" for the UH-1B to be proportional to the gross weight, inversely proportional to density, and inversely proportional to the one-third or one-fourth power of the disc loading. The curves in this figure indicate that a definite relation exists between the "unit gust parameter" and these parameters. A theoretical investigation should be conducted to determine the actual relation between the derived gust velocity and the helicopter response.

CONCLUSIONS

It is concluded that:

1. Within the limitations of this data sample, 219 hours of normal operation, the UH-1B instrumented helicopters did not exceed a normal acceleration of 2.2g. This value indicates that the design criteria originally used were more than adequate.

2. Practice autorotations, simulating emergency landings due to engine power failure, form a significant part of the load spectrum. The recorded data included 59 autorotations in 219 flight hours.

3. As proven, the monitoring of control deflections is an excellent method of separating acceleration peaks caused by maneuvers from those caused by turbulence.

4. A gust factor for helicopters, related to the derived gust velocities experienced by fixed-wing aircraft, is feasible.

RECOMMENDATIONS

In accordance with the findings of this report, it is recommended that USAAVLABS:

1. Develop a theoretical expression for a helicopter gust alleviation factor and check its validity against the UH-1B and CH-47 gust data recorded during the flight loads investigation program.

2. Record UH-1B combat data, if feasible, for comparison of this type of operation to the helicopter's design limits and to current training operations in the United States.

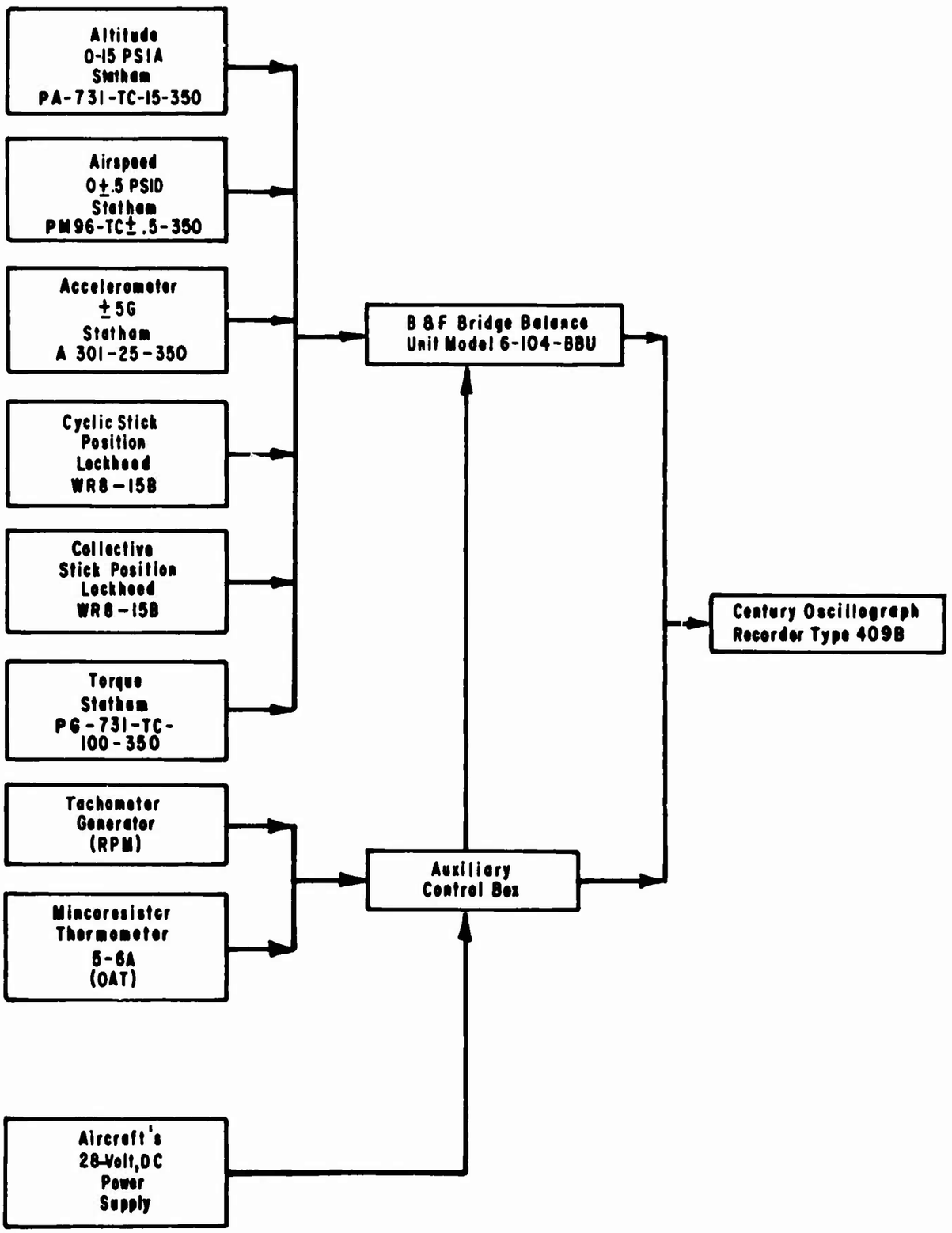


Figure 1. Block Diagram of UH-1B Instrumentation System.

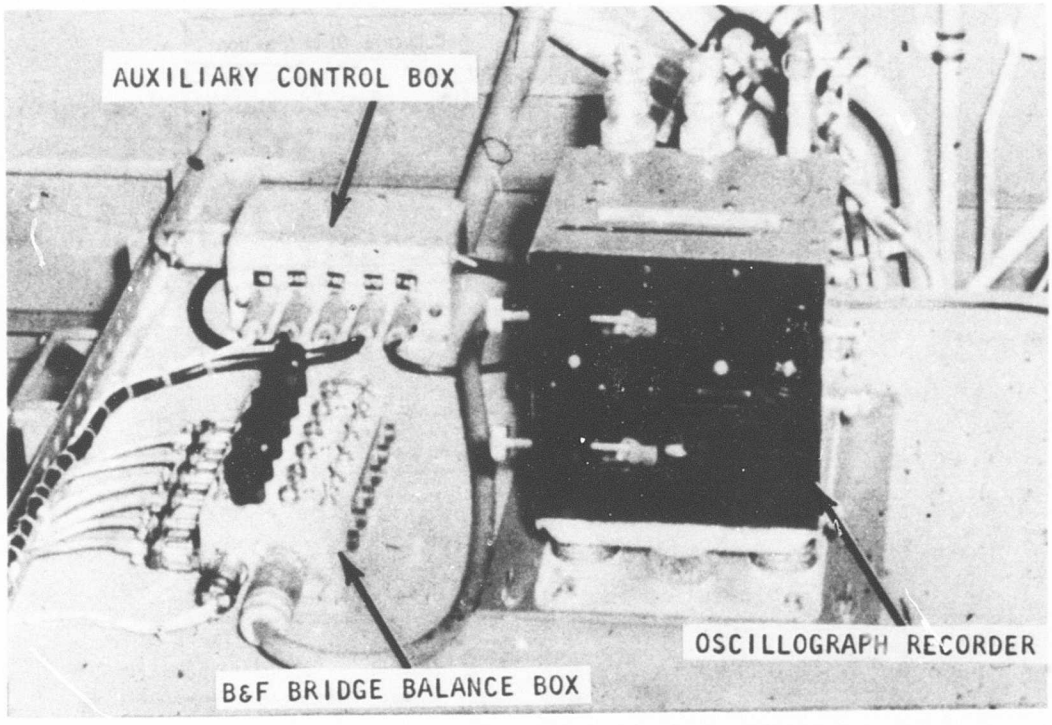


Figure 2. Oscillograph Recorder.

Figure 3. UH-1B Helicopter.

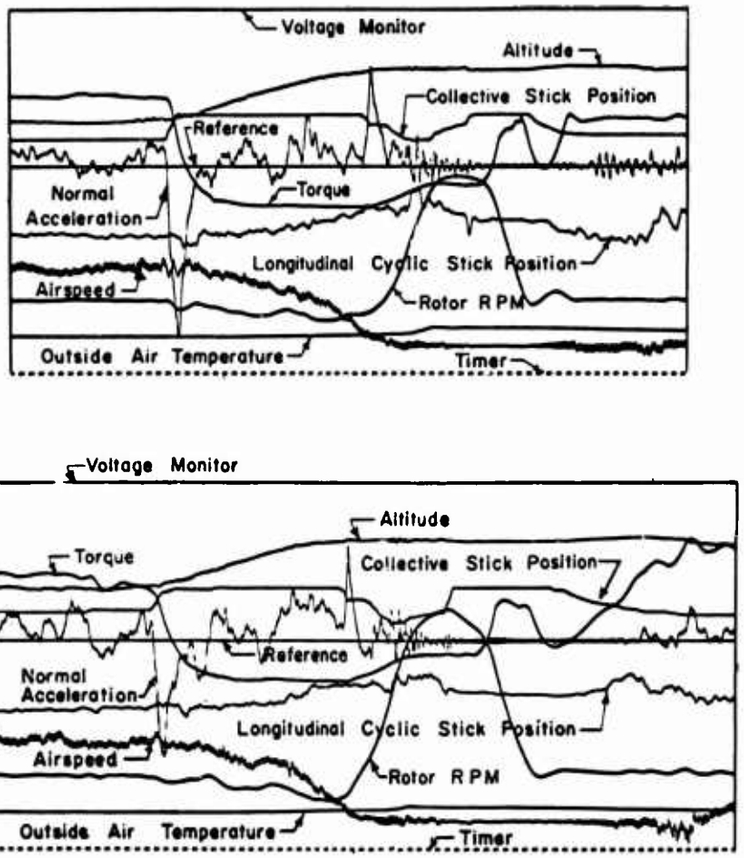


Figure 4. Oscillograms Showing Two Practice Autorotation Landings.

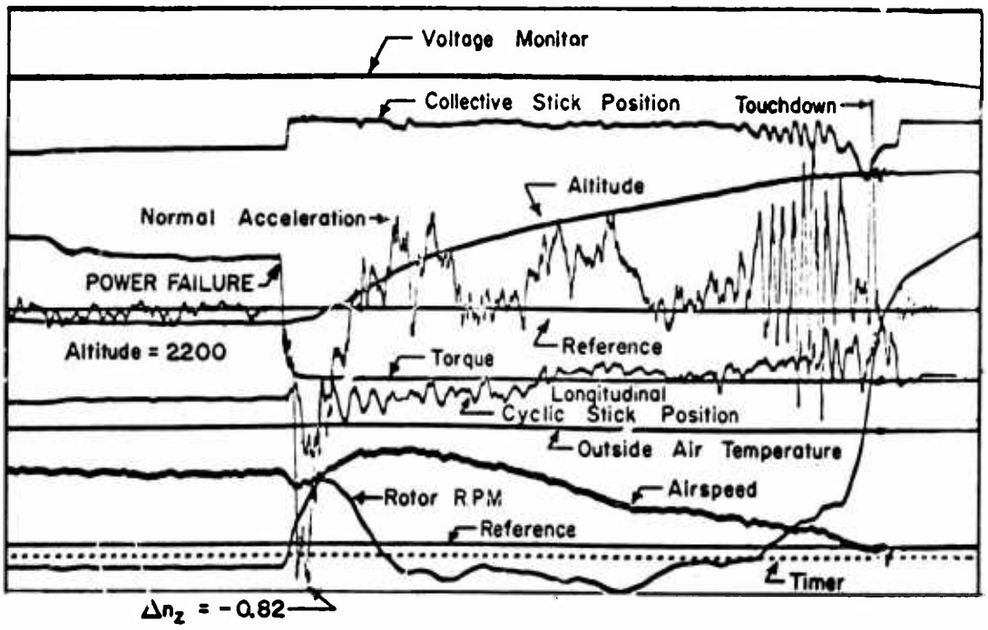


Figure 5. Oscillogram Showing UH-1B Power Failure and Forced Landing.

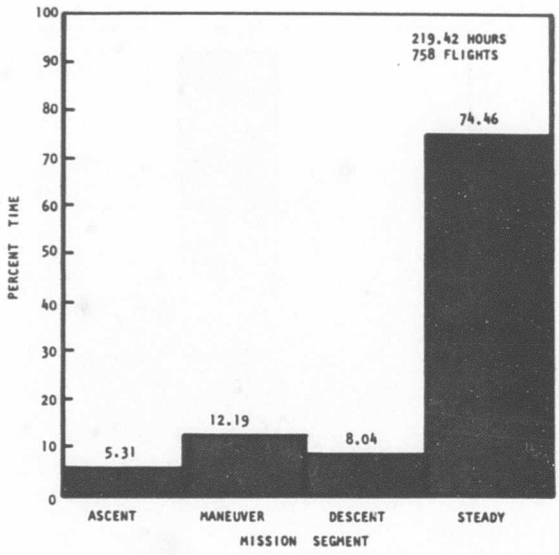


Figure 6. Percentage of Total Flight Time in Each Mission Segment.

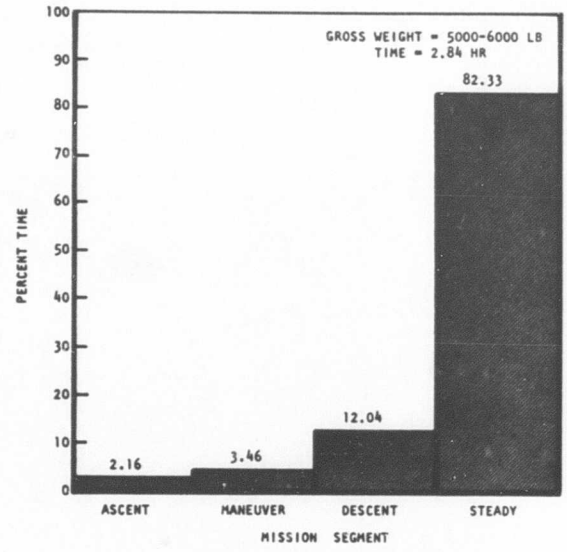


Figure 7. Time in the 5000-to-6000-Pound Gross Weight Range Broken Down by Percentage in Each Mission Segment.

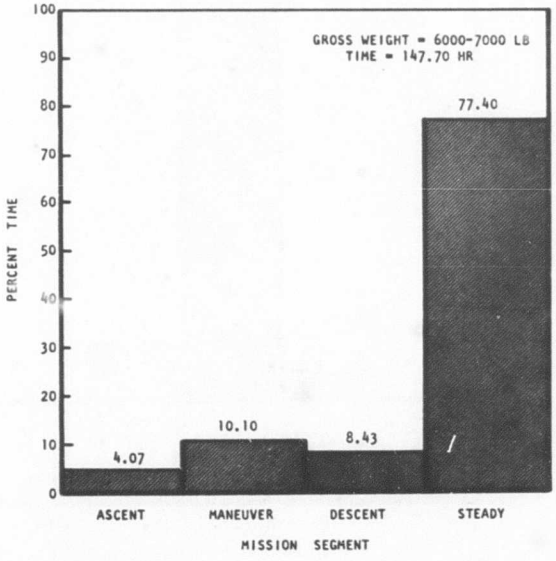


Figure 8. Time in the 6000-to-7000-Pound Gross Weight Range Broken Down by Percentage in Each Mission Segment.

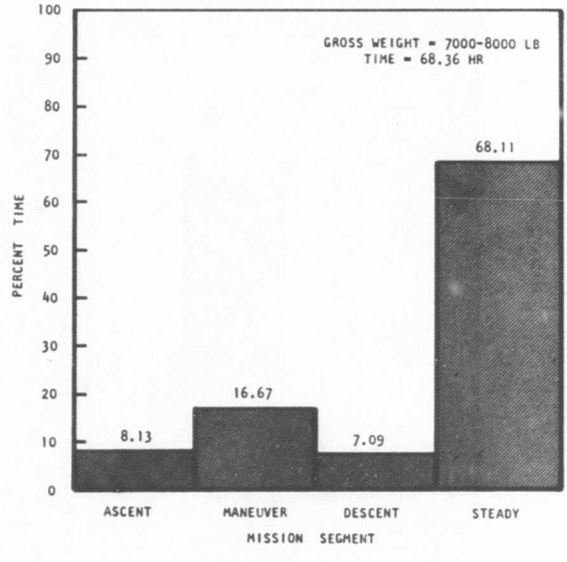


Figure 9. Time in the 7000-to-8000-Pound Gross Weight Range Broken Down by Percentage in Each Mission Segment.

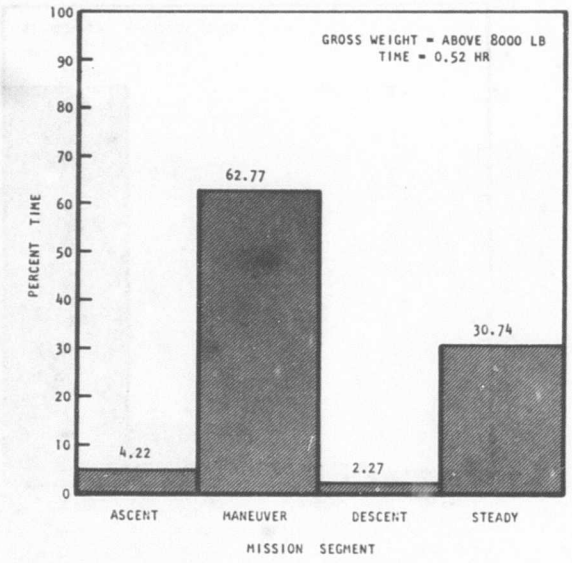


Figure 10. Time in the Above-8000-Pound Gross Weight Range Broken Down by Percentage in Each Mission Segment.

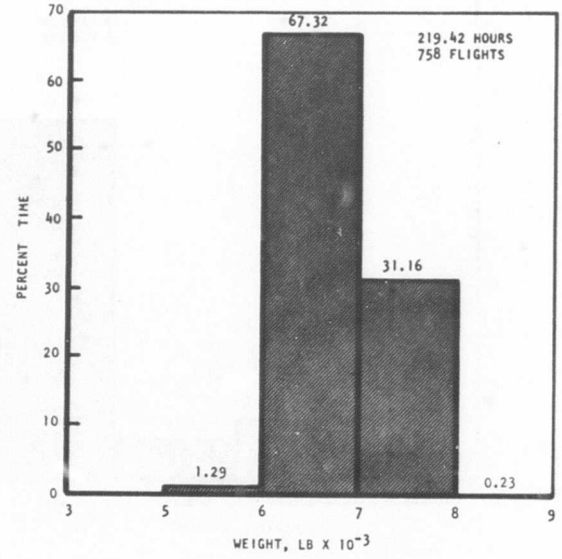


Figure 11. Percentage of Steady-State Mission Segment Flight Time in Each Gross Weight Range.

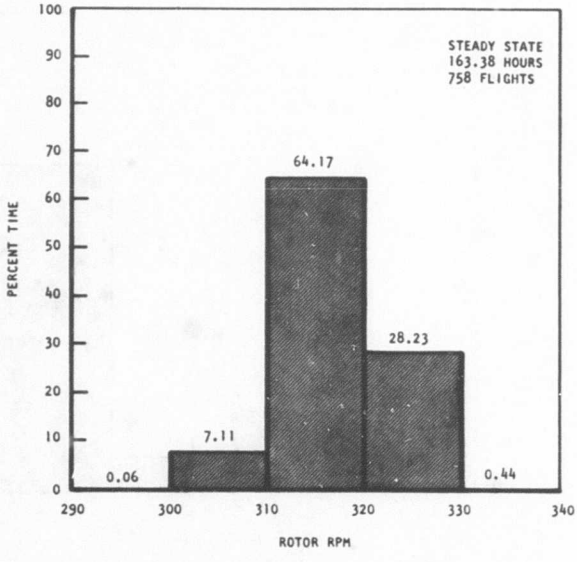


Figure 12. Percentage of Steady-State Mission Segment Flight Time in Each Rotor RPM Range.

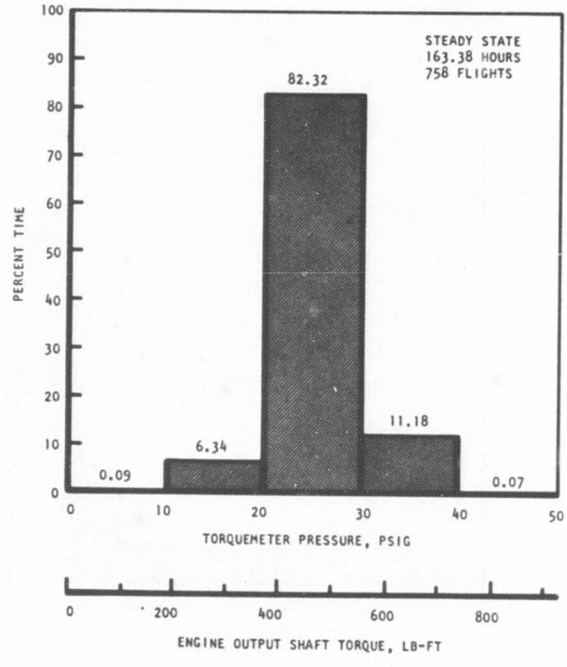


Figure 13. Percentage of Steady-State Mission Segment Flight Time in Each Engine Torque Range.

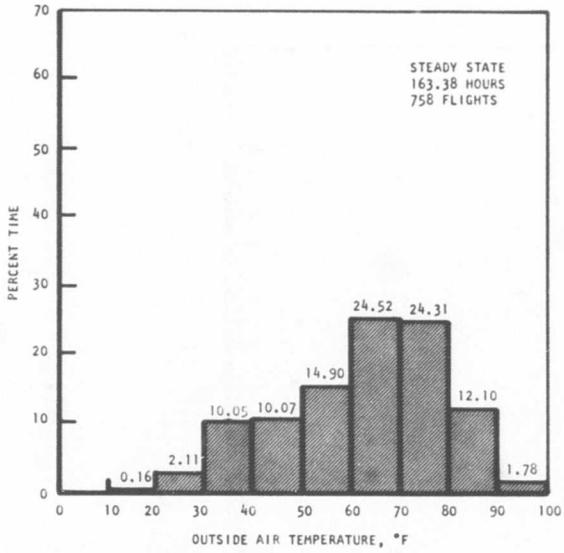


Figure 14. Percentage of Steady-State Mission Segment Flight Time in Each Outside Air Temperature Range.

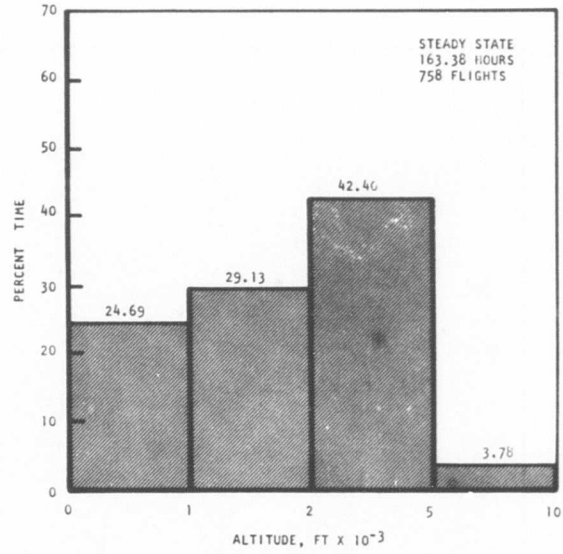


Figure 15. Percentage of Steady-State Mission Segment Flight Time in Each Density Altitude Range.

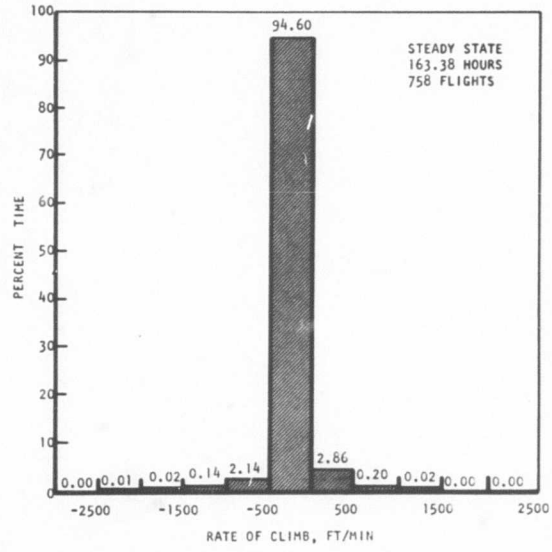


Figure 16. Percentage of Steady-State Mission Segment Flight Time in Each Indicated Airspeed Range.

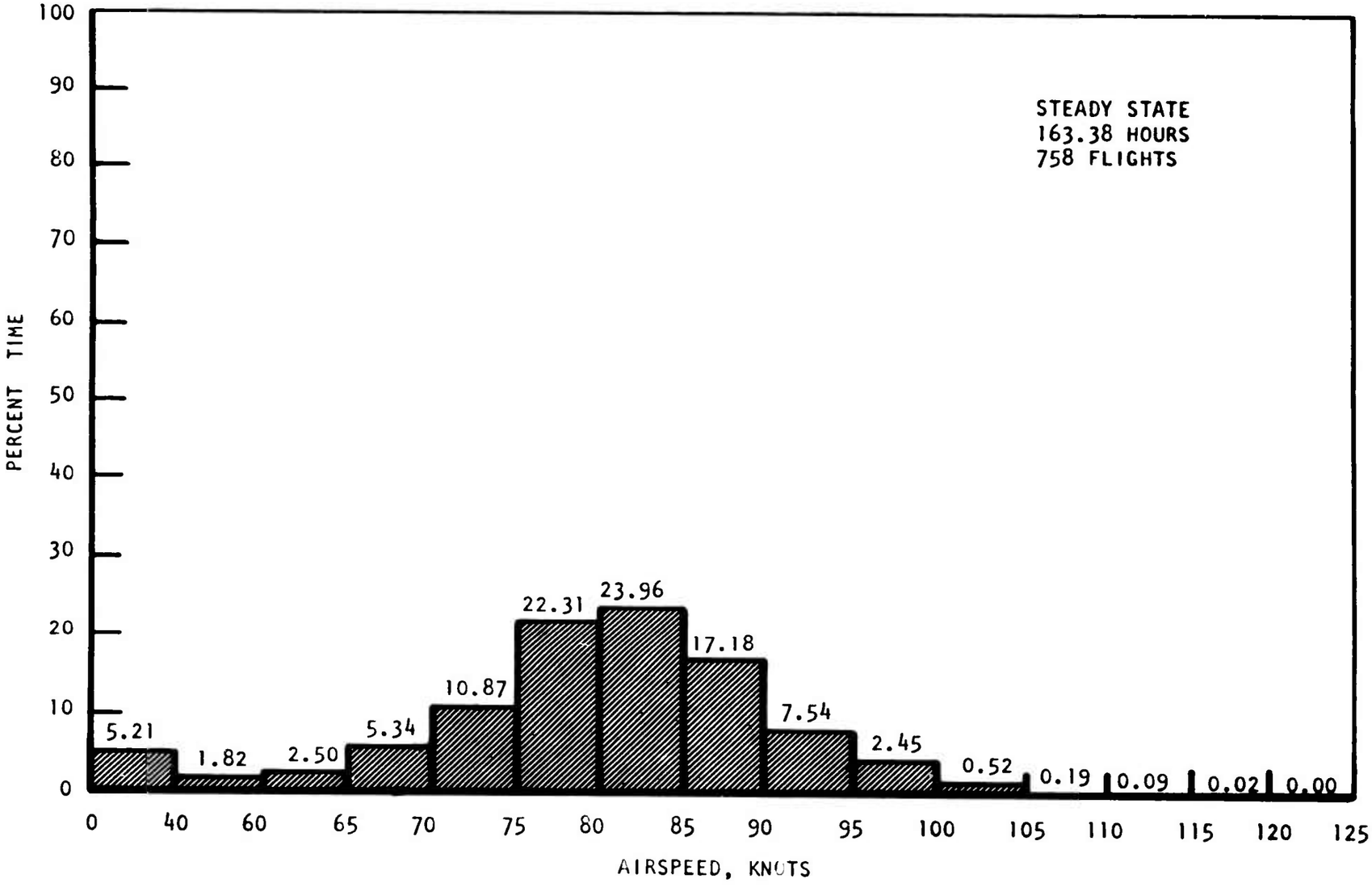


Figure 17. Percentage of Steady-State Mission Segment Flight Time in Each Indicated Airspeed Range.

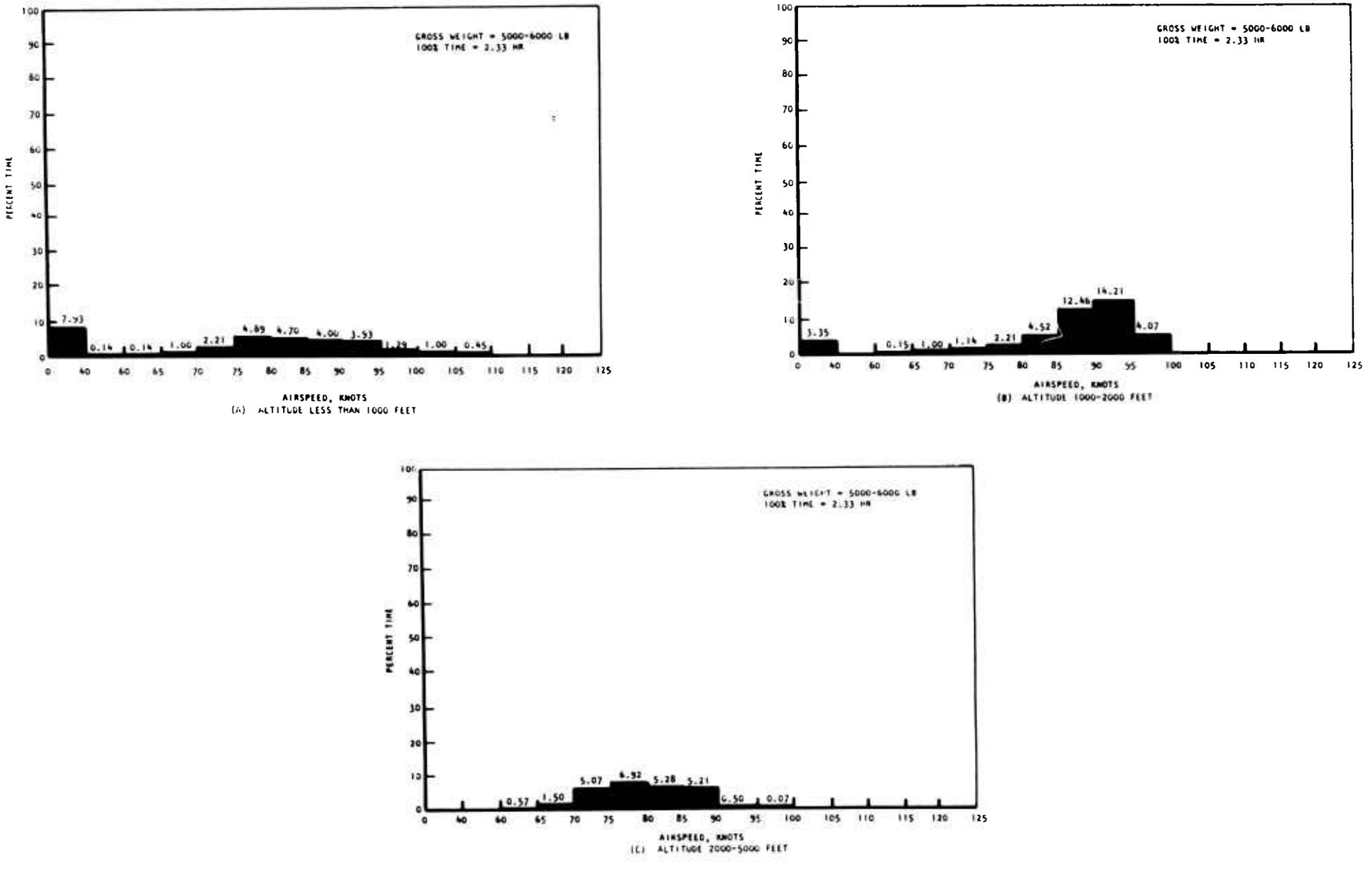


Figure 18. Time in Steady-State Mission Segment in 5000-to-6000-Pound Gross Weight Range Broken Down by Percentage in Each Density Altitude-Airspeed Range.

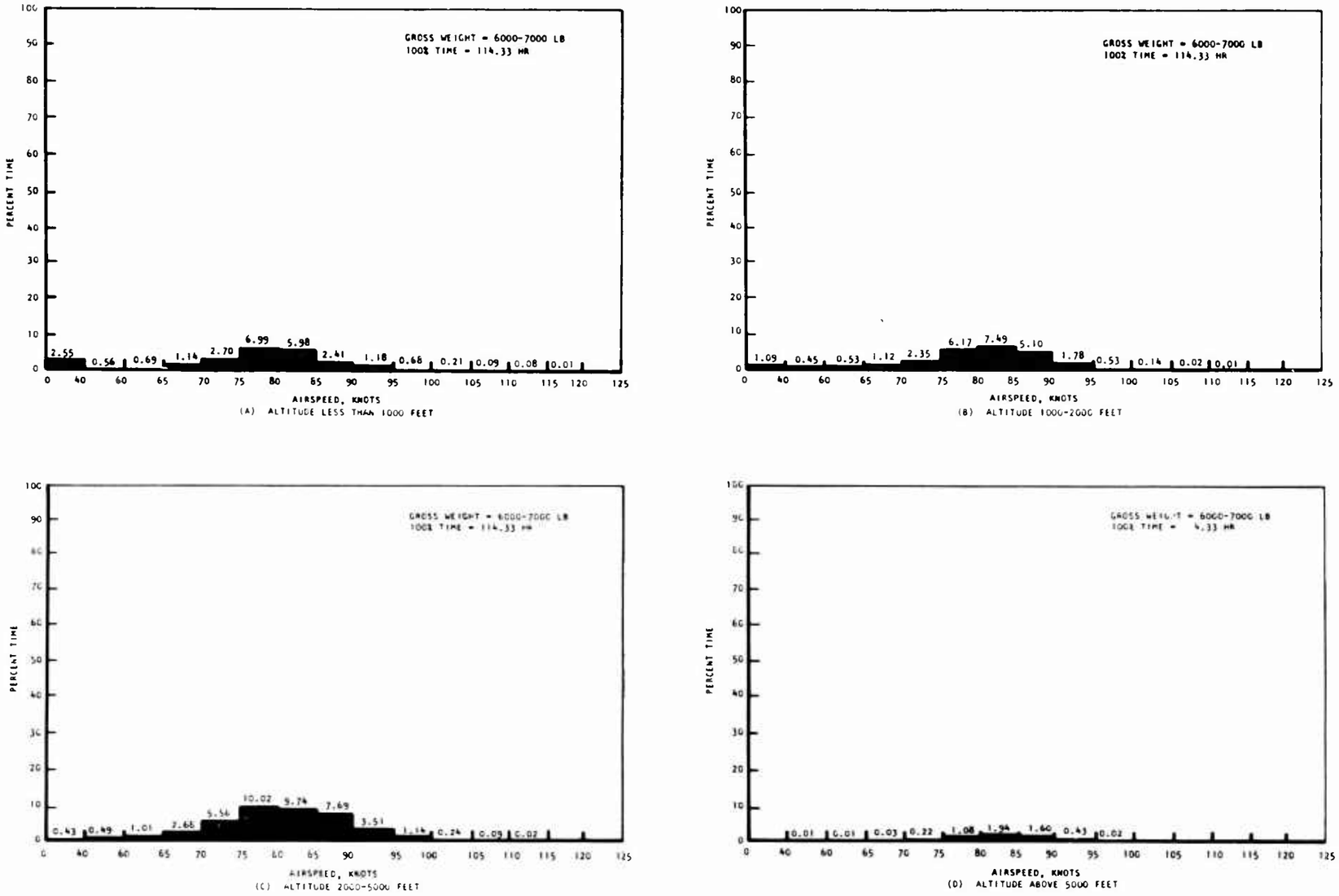


Figure 19. Time in Steady-State Mission Segment in 6000-to-7000-Pound Gross Weight Range Broken Down by Percentage in Each Density Altitude-Airspeed Range.

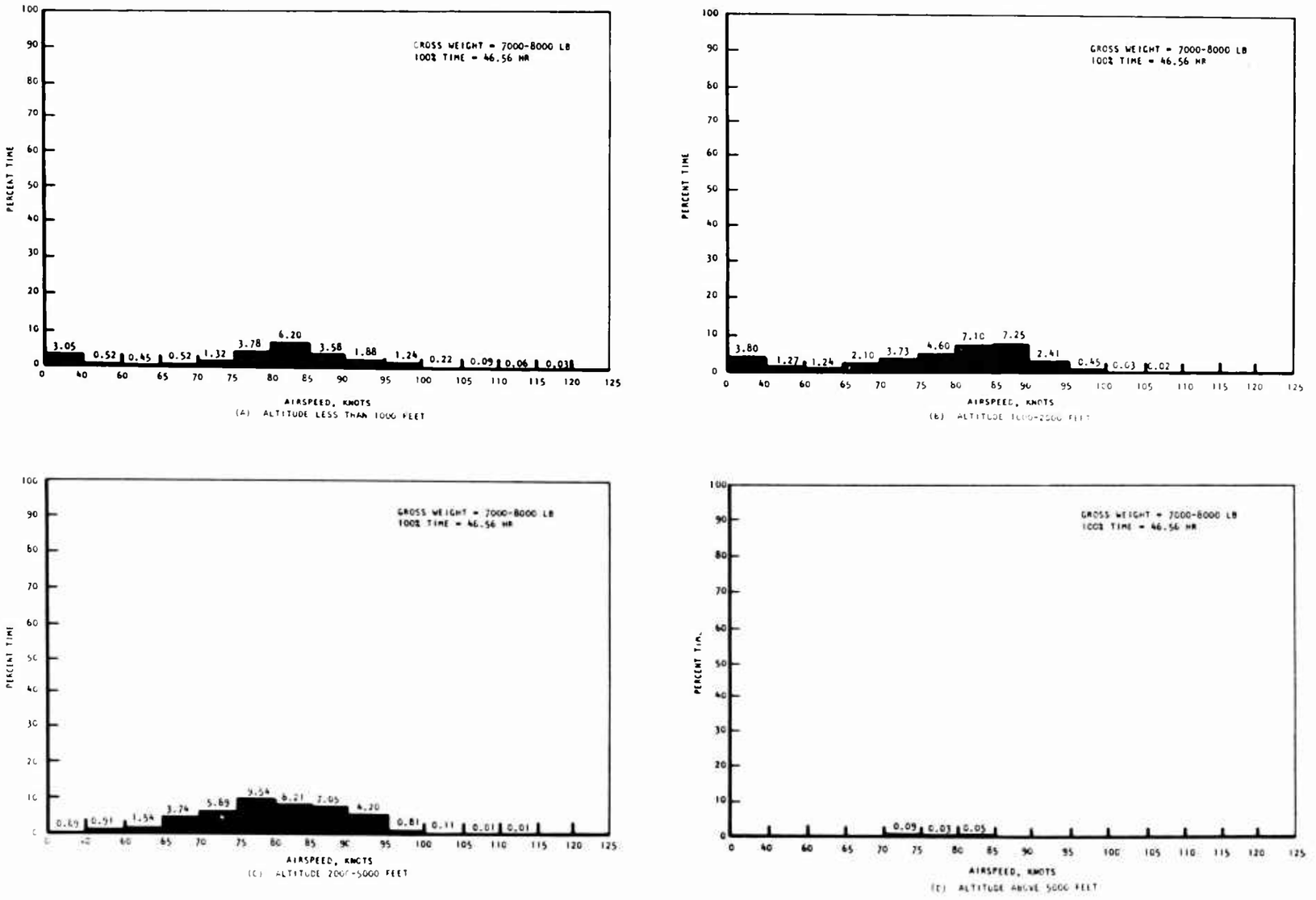


Figure 20. Time in Steady-State Mission Segment in 7000-to-8000-Pound Gross Weight Range Broken Down by Percentage in Each Density Altitude-Airspeed Range.

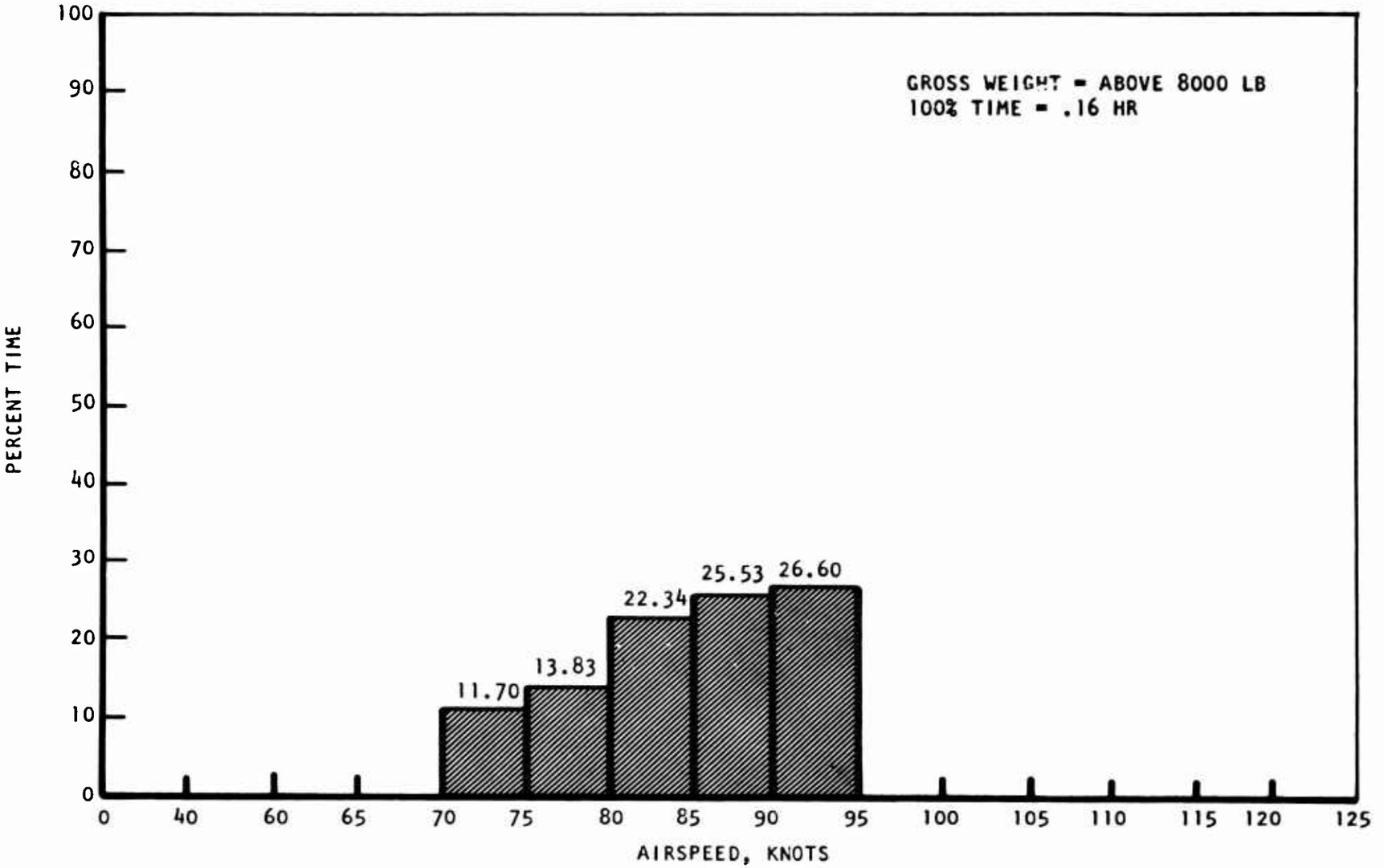


Figure 21. Time in Steady-State Mission Segment in Above-8000-Pound Gross Weight Range Broken Down by Percentage in Each Airspeed Range - Density Altitude 1000-2000 Feet.

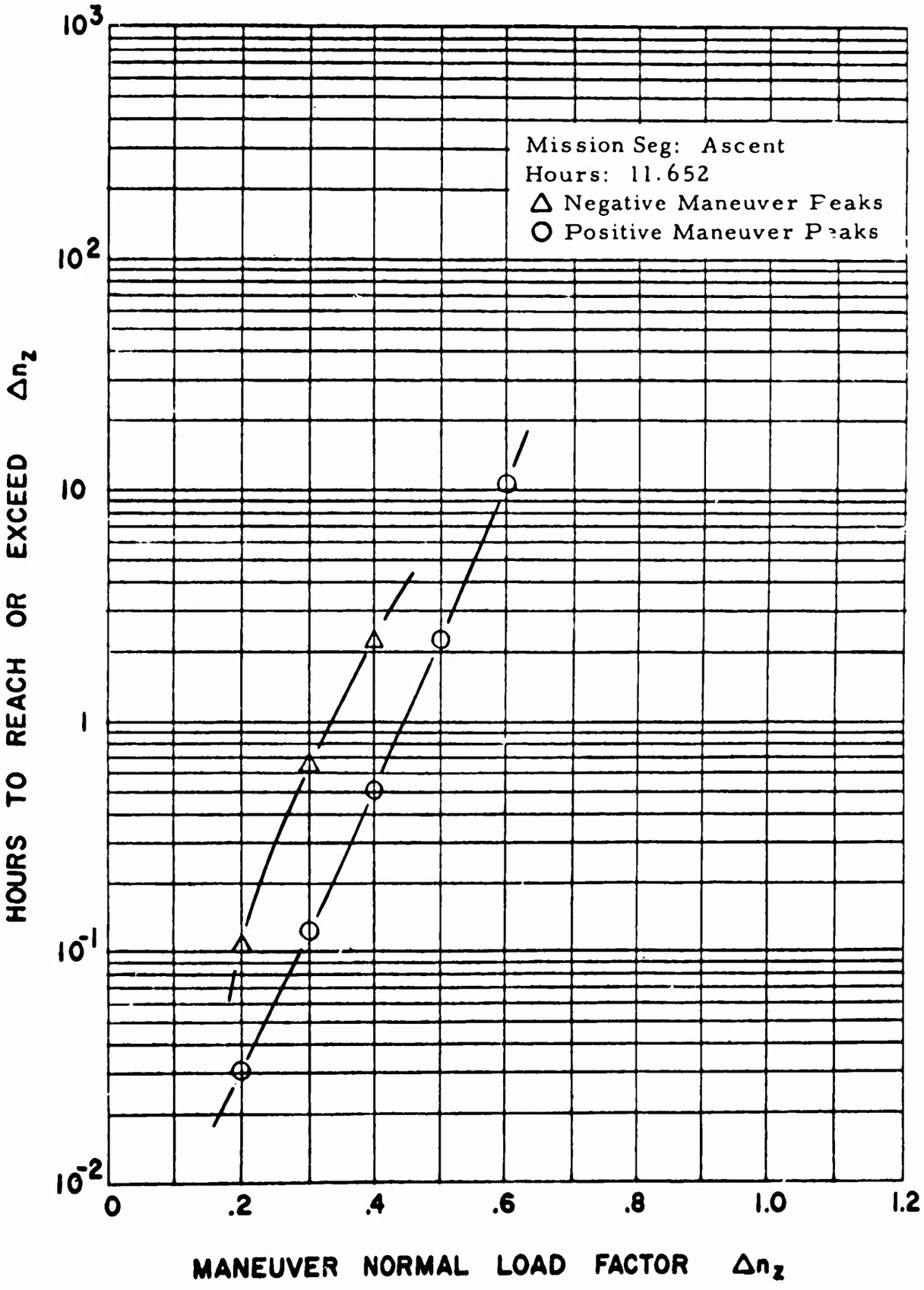


Figure 22. Exceedance Curves for Incremental Maneuver Normal Load Factor Peaks in the Ascent Mission Segment.

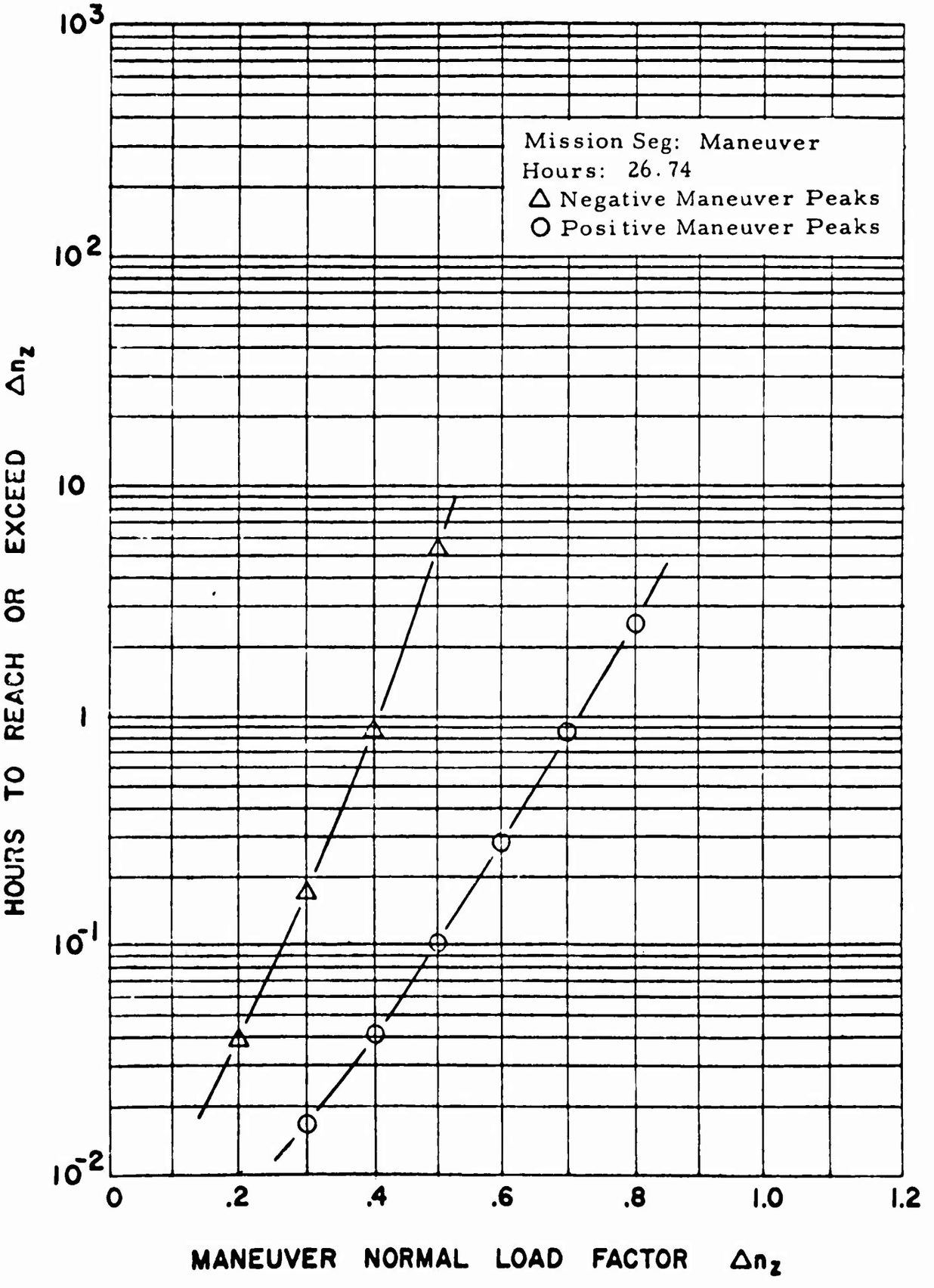


Figure 23. Exceedance Curves for Incremental Maneuver Normal Load Factor Peaks in the Maneuver Mission Segment.

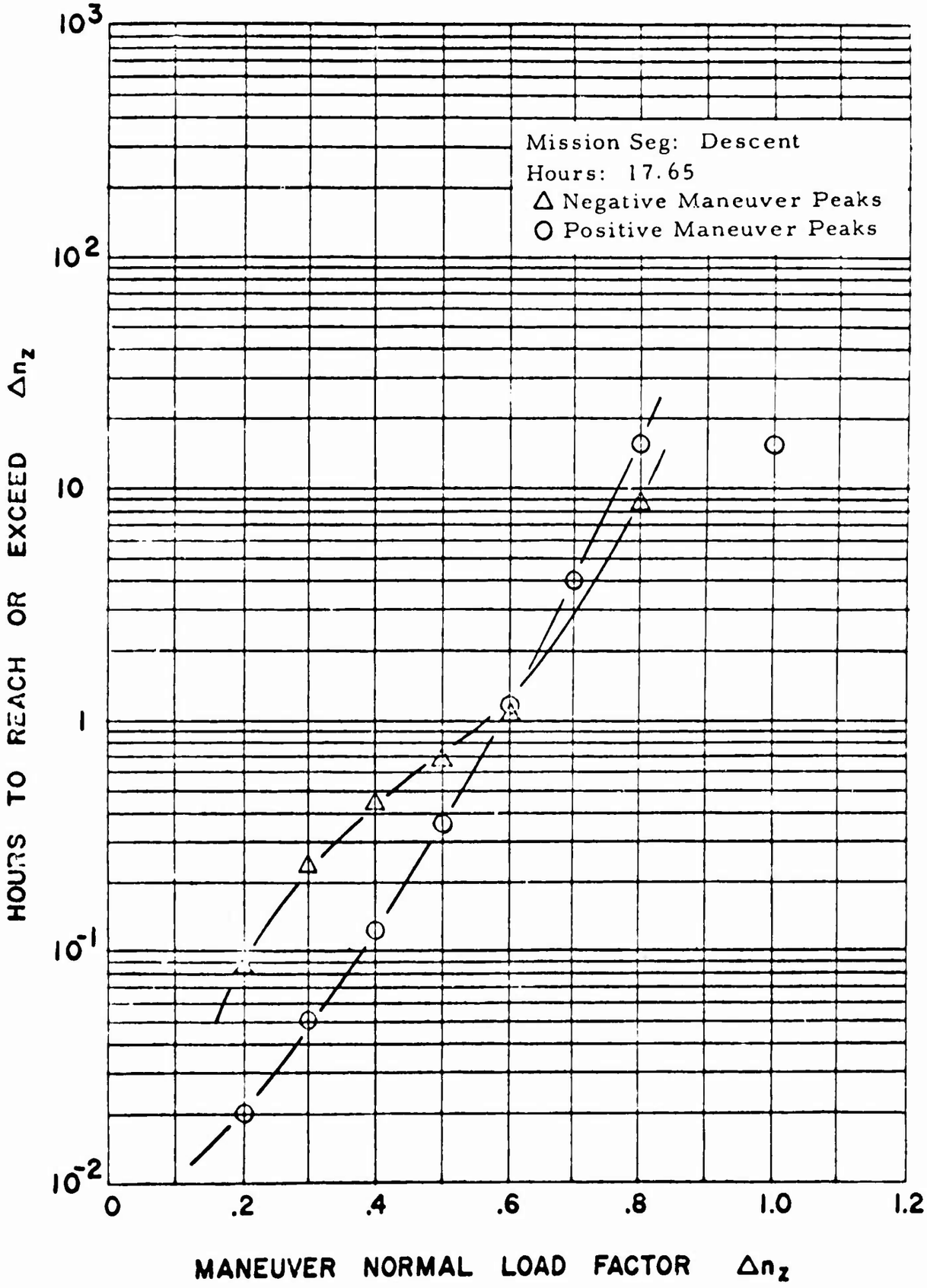


Figure 24. Exceedance Curves for Incremental Maneuver Normal Load Factor Peaks in the Descent Mission Segment.

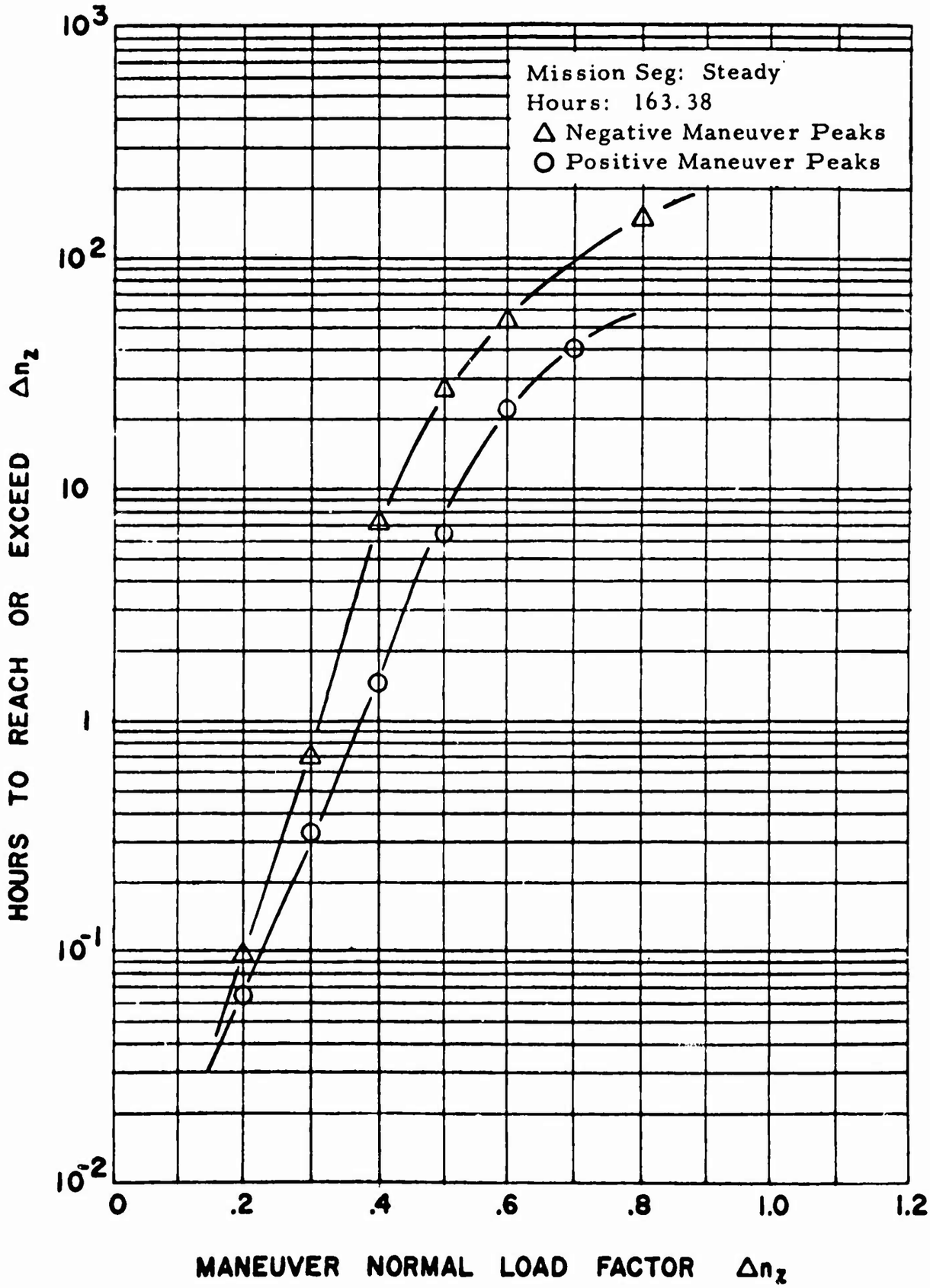


Figure 25. Exceedance Curves for Incremental Maneuver Normal Load Factor Peaks in the Steady-State Mission Segment.

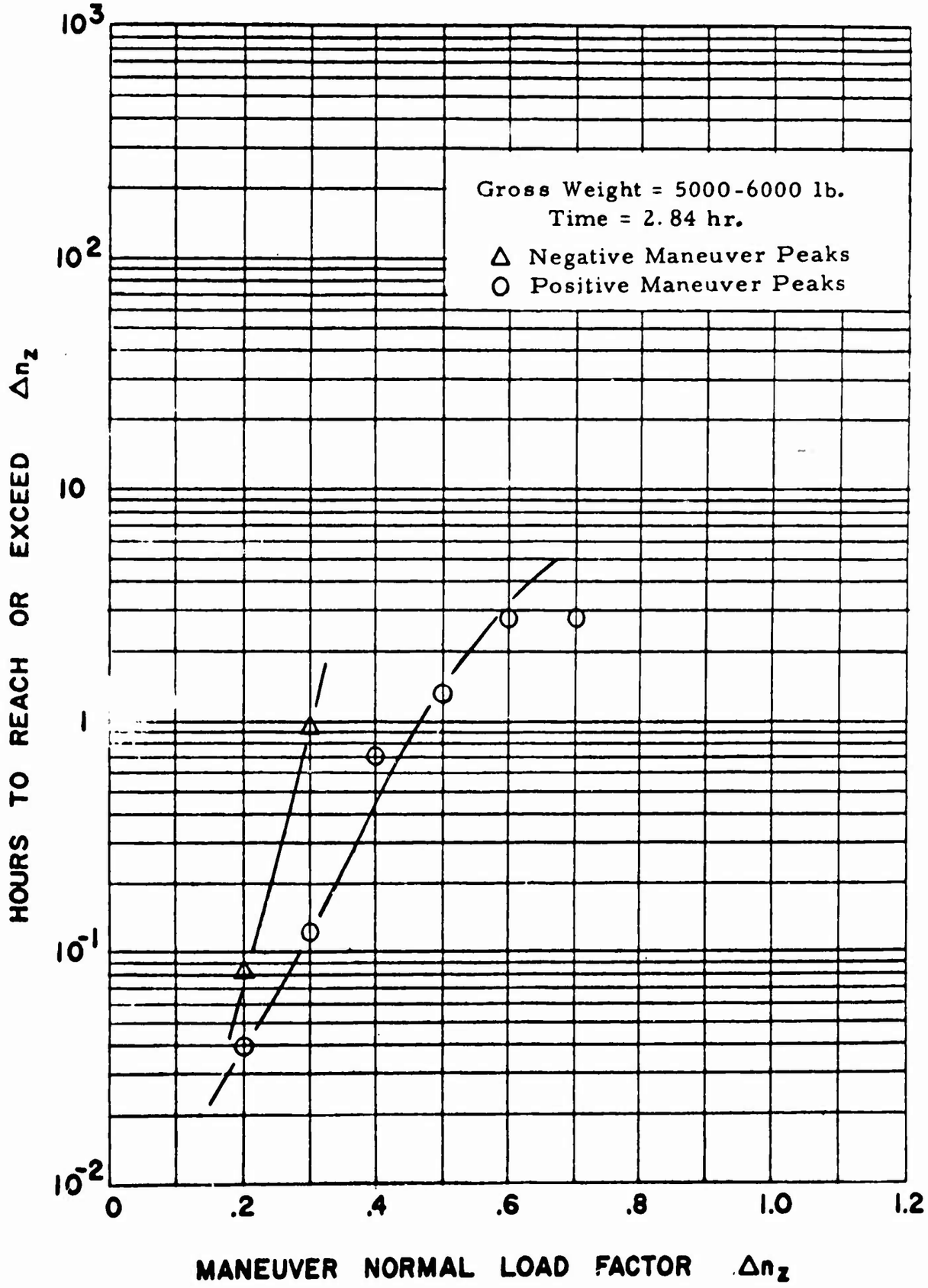


Figure 26. Exceedance Curves for Incremental Maneuver Normal Load Factor Peaks in the 5000-6000-Pound Gross Weight Range.

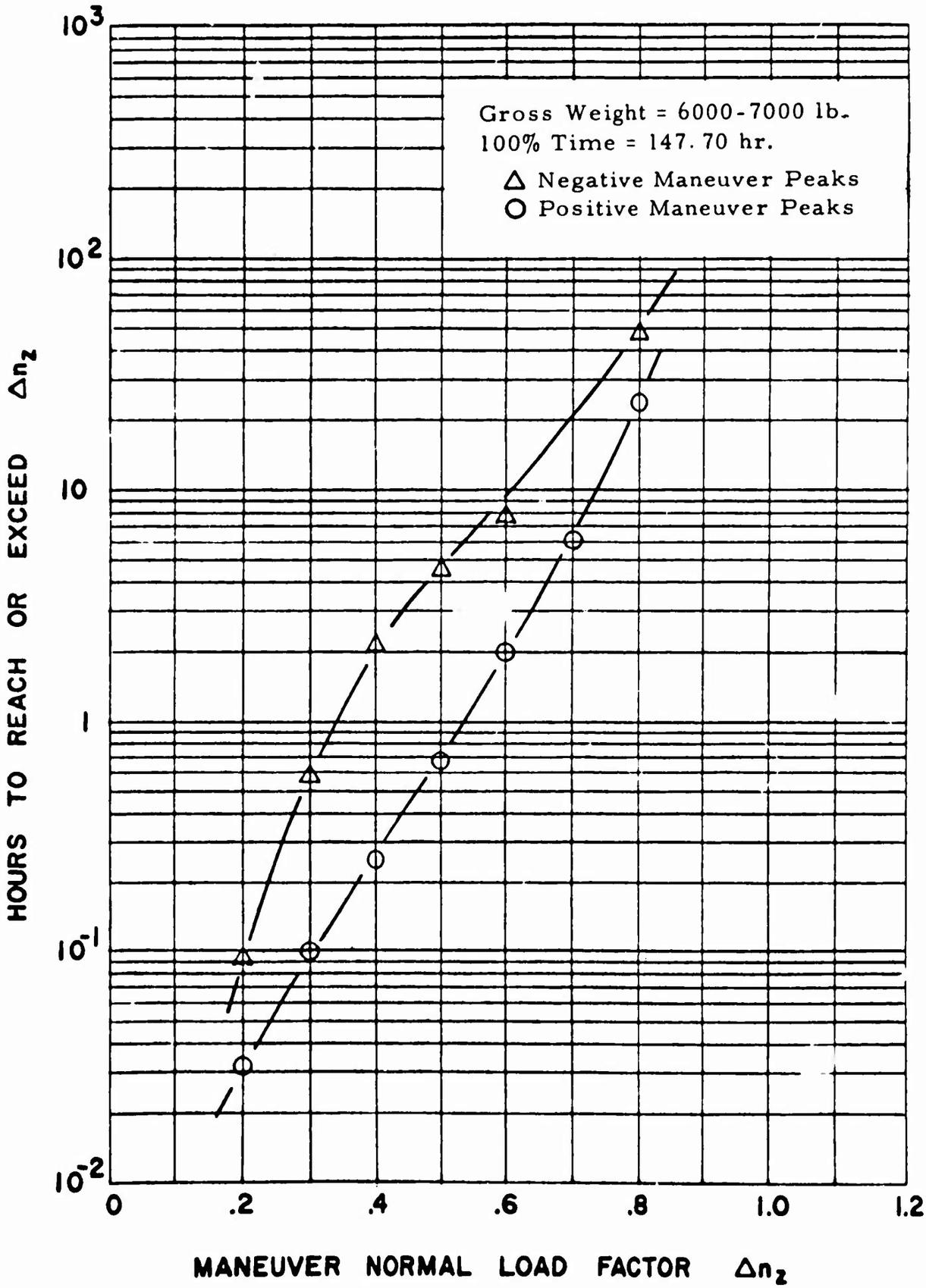


Figure 27. Exceedance Curves for Incremental Maneuver Normal Load Factor Peaks in the 6000-7000-Pound Gross Weight Range.

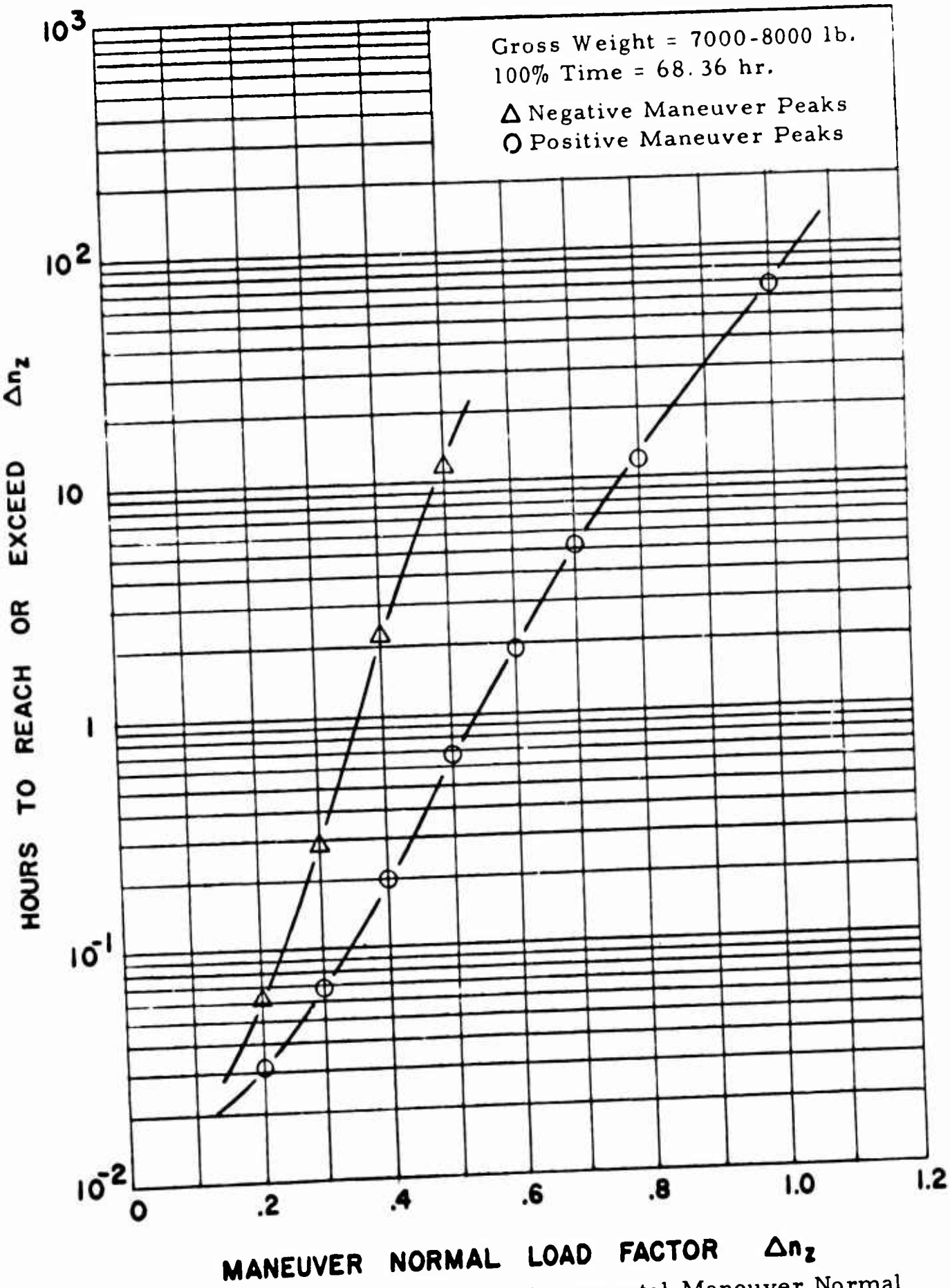


Figure 28. Exceedance Curves for Incremental Maneuver Normal Load Factor Peaks in the 7000-8000-Pound Gross Weight Range.

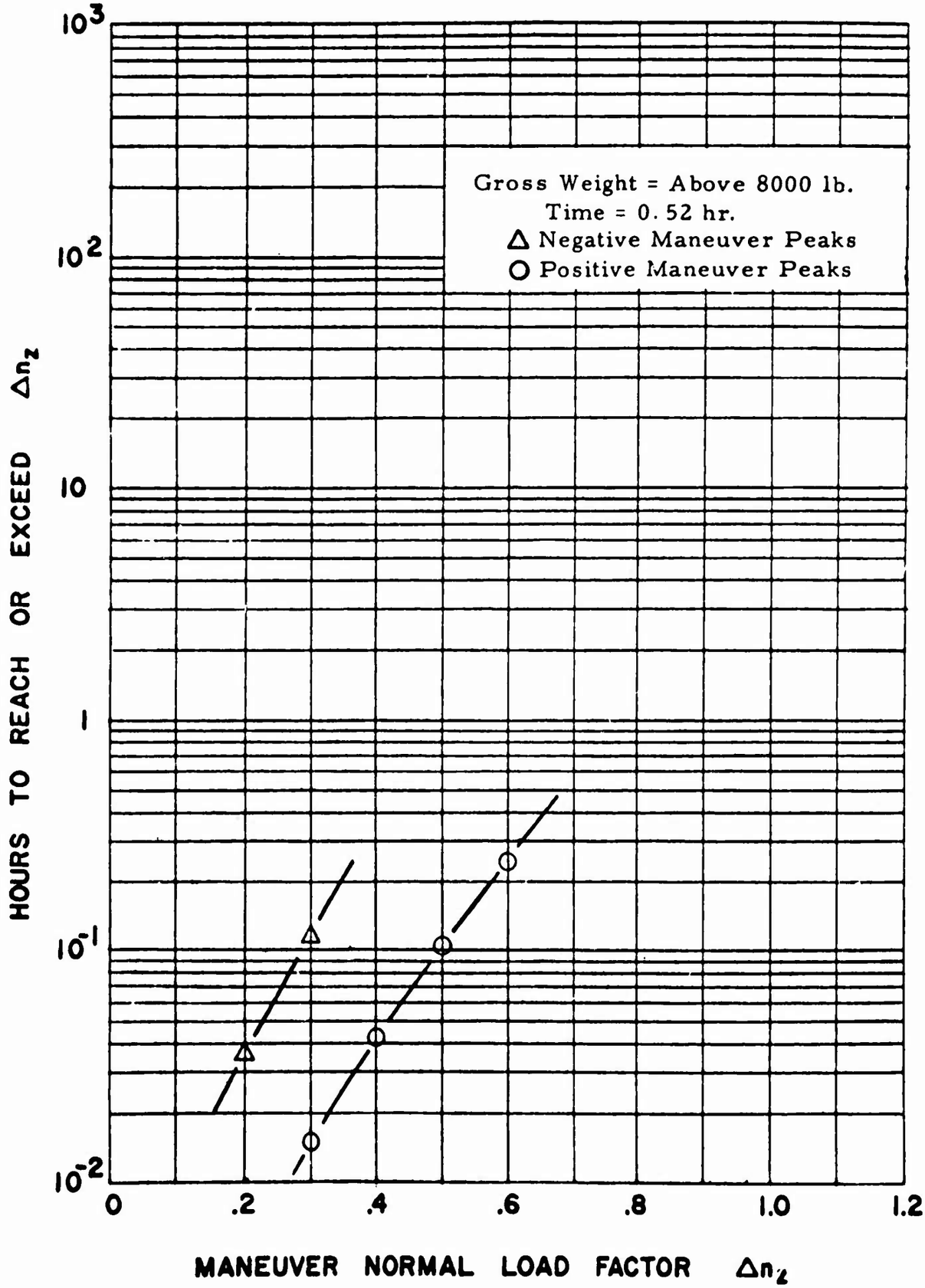


Figure 29. Exceedance Curves for Incremental Maneuver Normal Load Factor Peaks in the Above-8000-Pound Gross Weight Range.

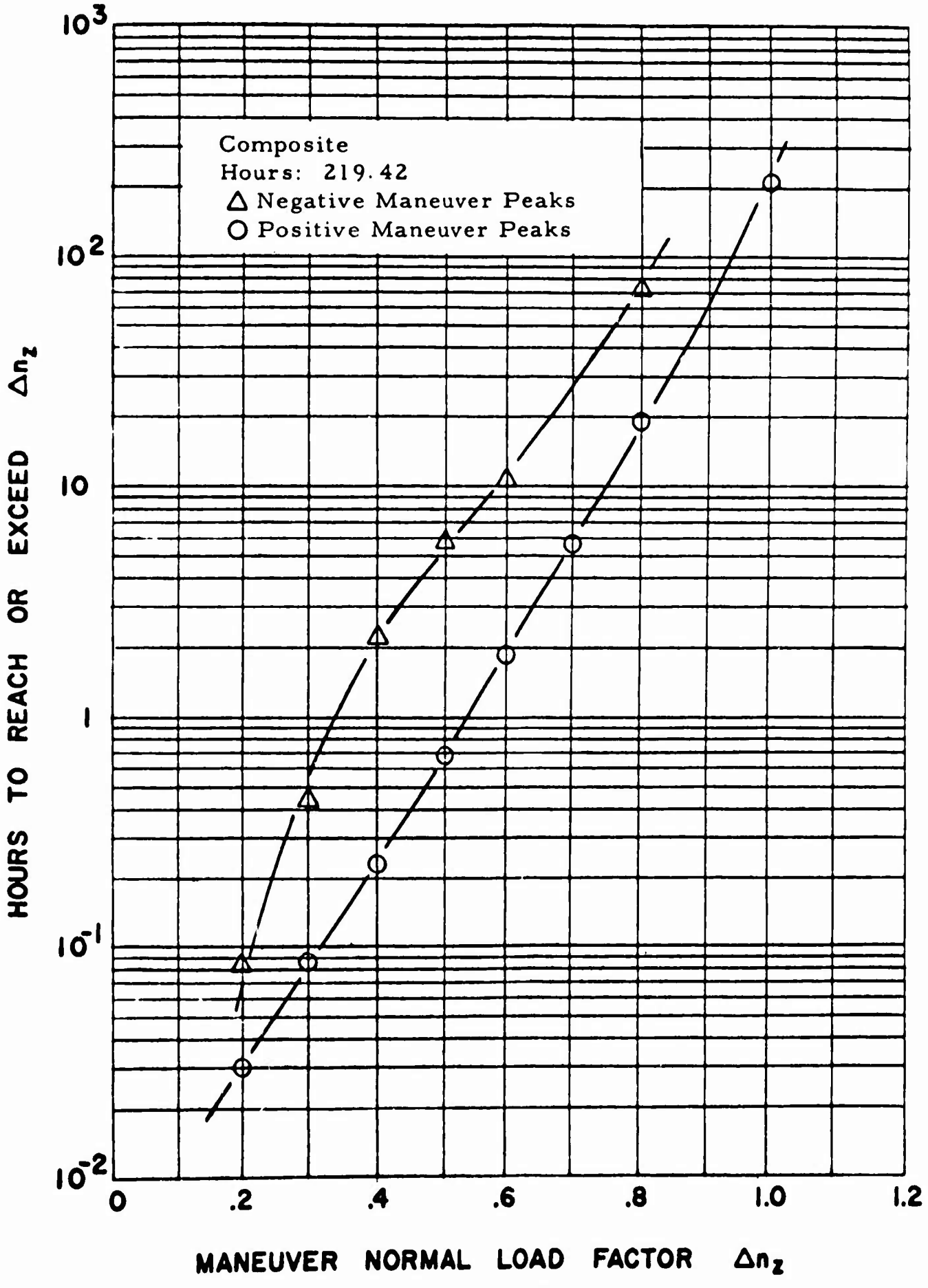
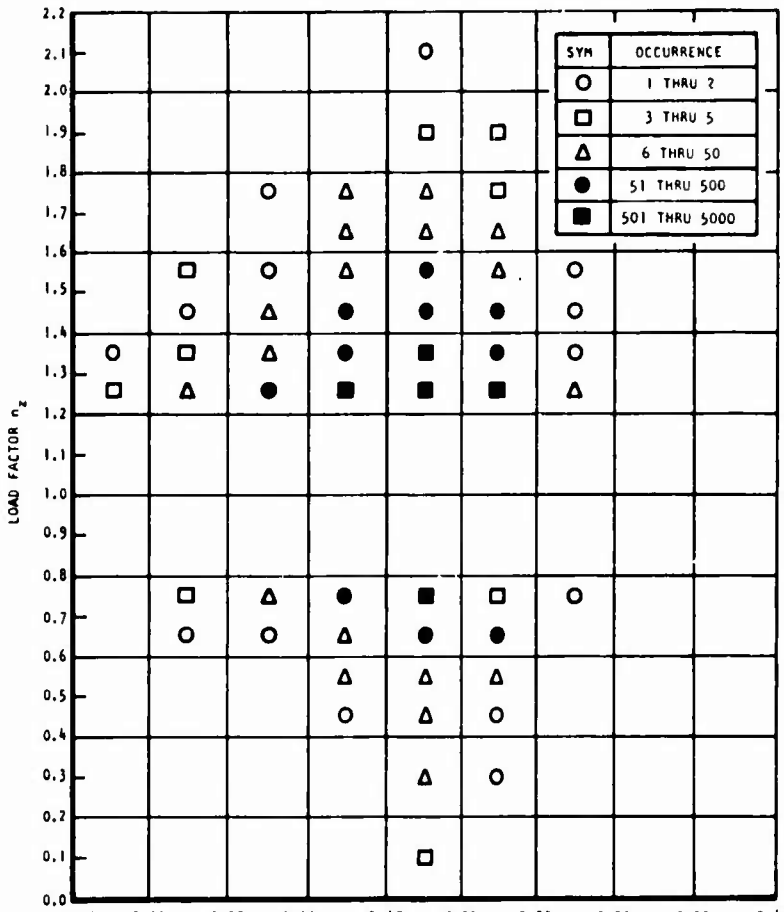


Figure 30. Composite Exceedance Curves for Incremental Maneuver Normal Load Factor Peaks.



LOAD FACTOR n_z	TIP SPEED RATIO μ									TOTAL
	LESS THAN 0.00	0.00 to 0.05	0.05 to 0.10	0.10 to 0.15	0.15 to 0.20	0.20 to 0.25	0.25 to 0.30	0.30 to 0.35	0.35 to 0.40	
2.0 to 2.2					1					1
1.9 to 2.0										
1.8 to 1.9					5	5				10
1.7 to 1.8			1	6	16	4				27
1.6 to 1.7				18	48	9				75
1.5 to 1.6		3	2	47	141	17	1			211
1.4 to 1.5		1	10	127	381	59	1			579
1.3 to 1.4	2	4	26	271	1120	207	2			1632
1.2 to 1.3	3	27	77	807	3087	791	6			4798
1.1 to 1.2										
0.7 to 0.8		5	9	189	1469	522	2			2196
0.6 to 0.7		1	1	25	246	114				387
0.5 to 0.6				7	36	19				62
0.4 to 0.5				1	15	2				18
0.2 to 0.4					14	2				16
0.0 to 0.2					3					3
TOTAL	5	41	126	1498	6582	1751	12			10015

Figure 31. Diagram and Tabulation of Maneuver Normal Load Factor Peaks in Ranges of Rotor Tip Speed Ratio.

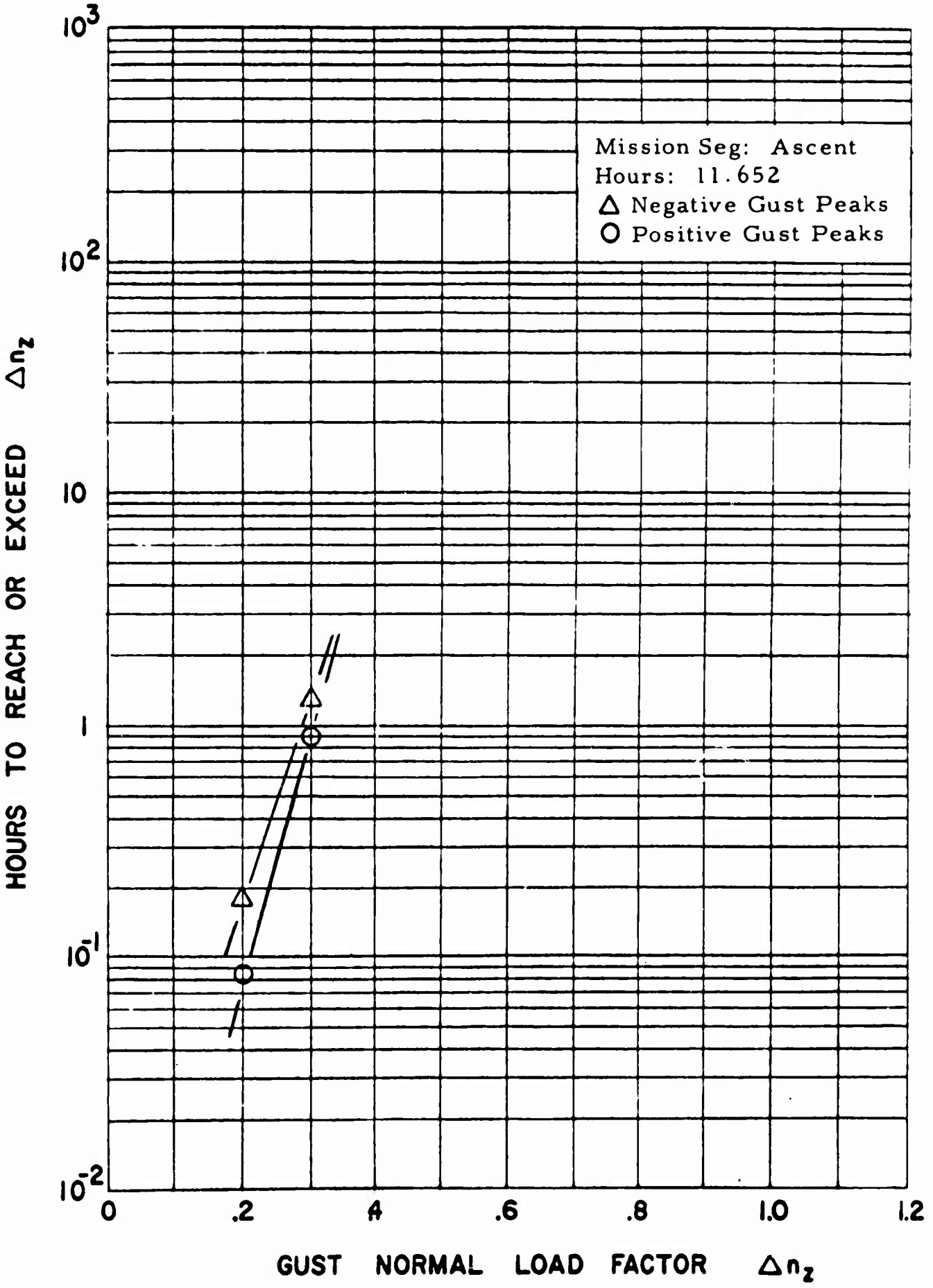


Figure 32. Exceedance Curves for Incremental Gust Normal Load Factor Peaks in the Ascent Mission Segment.

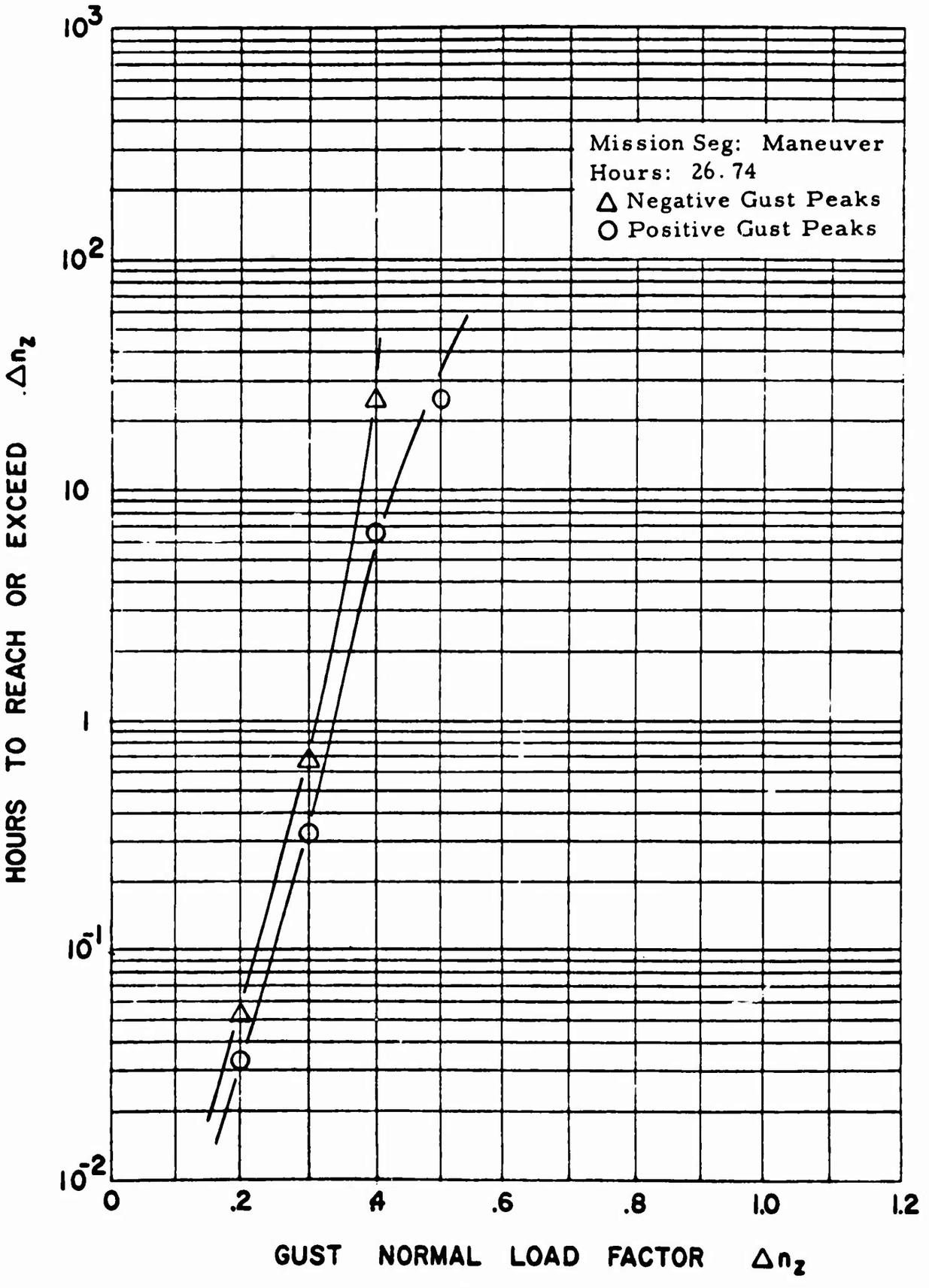


Figure 33. Exceedance Curves for Incremental Gust Normal Load Factor Peaks in the Maneuver Mission Segment.

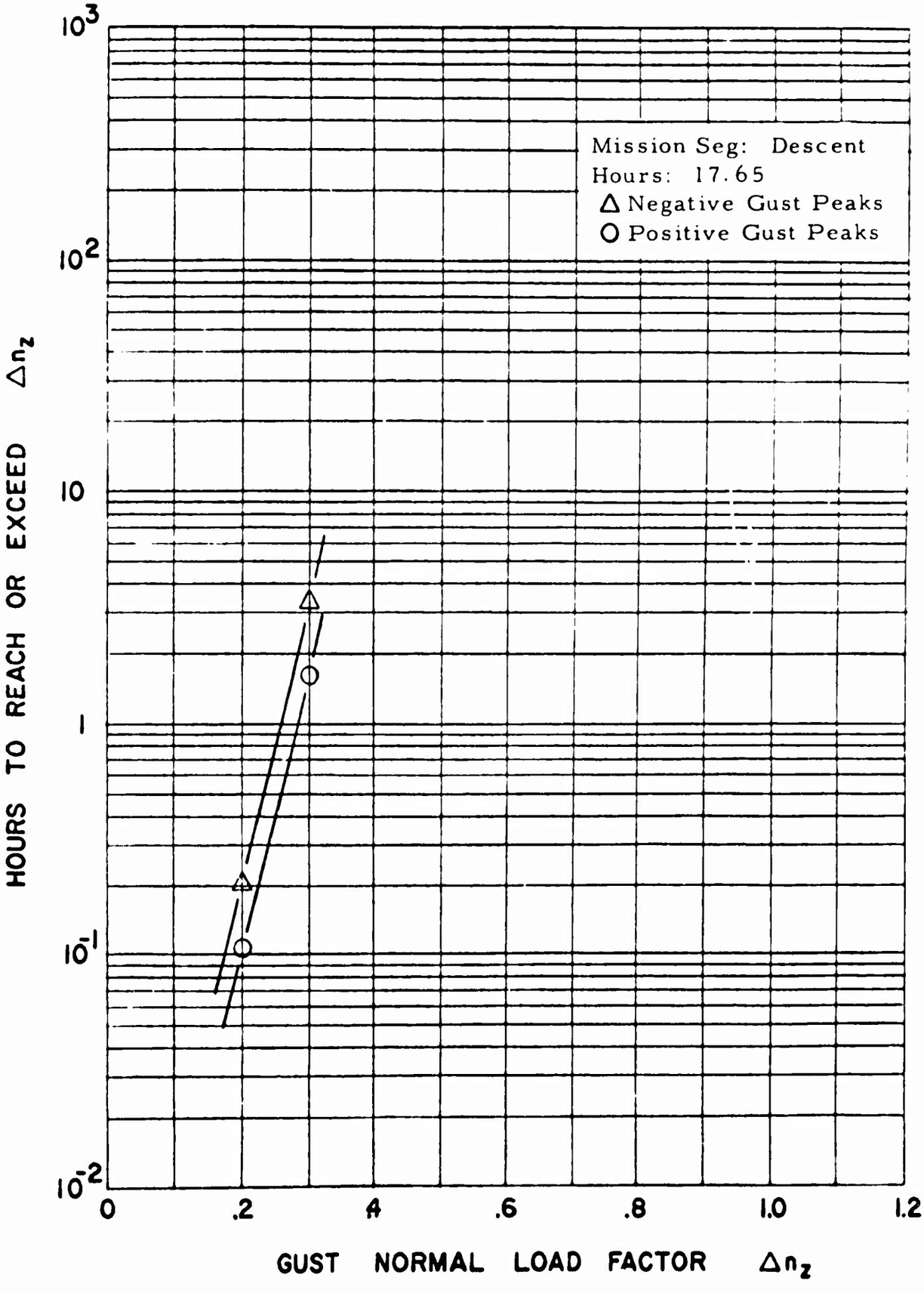


Figure 34. Exceedance Curves for Incremental Gust Normal Load Factor Peaks in the Descent Mission Segment.

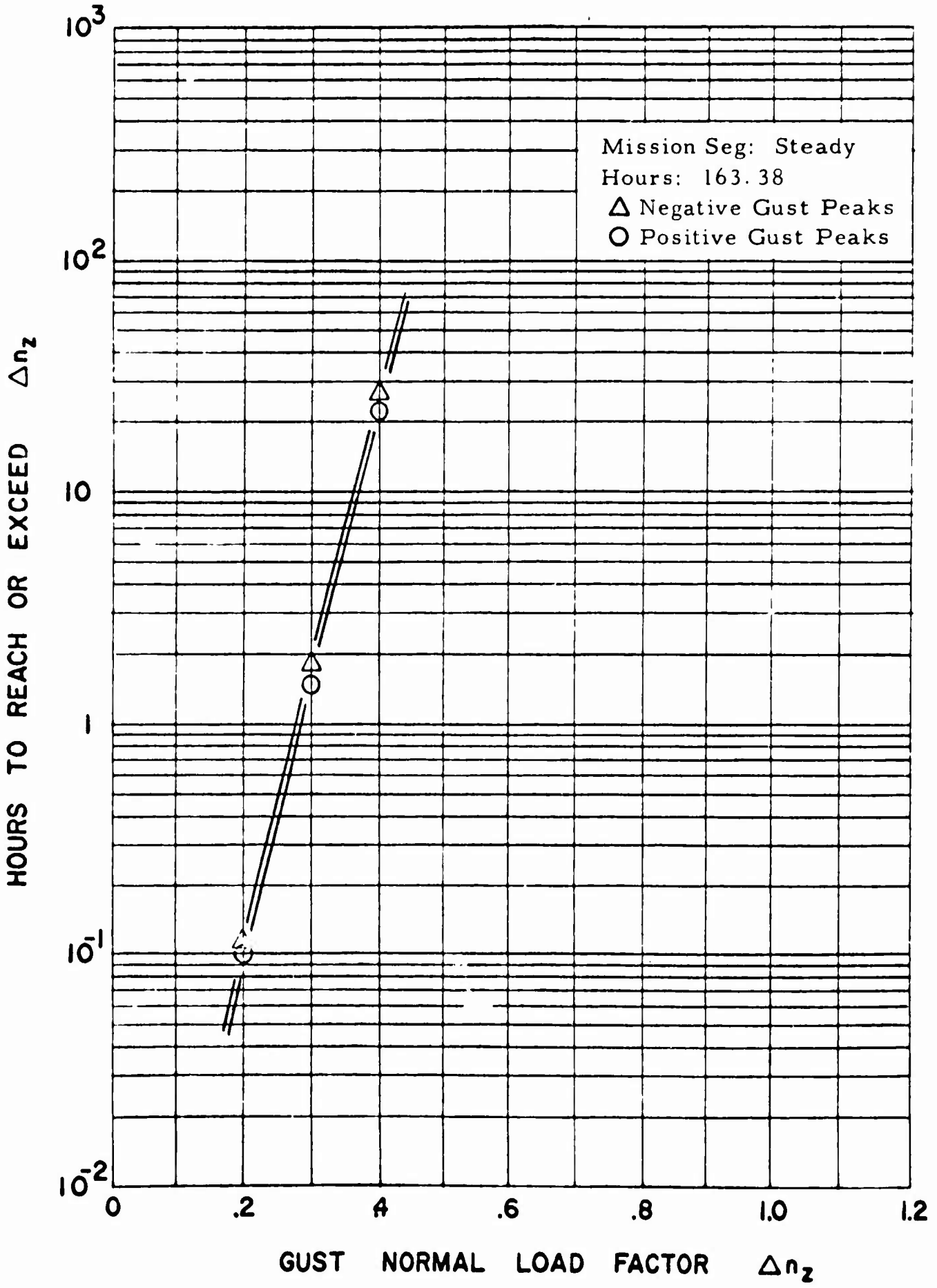


Figure 35. Exceedance Curves for Incremental Gust Normal Load Factor Peaks in the Steady-State Mission Segment.

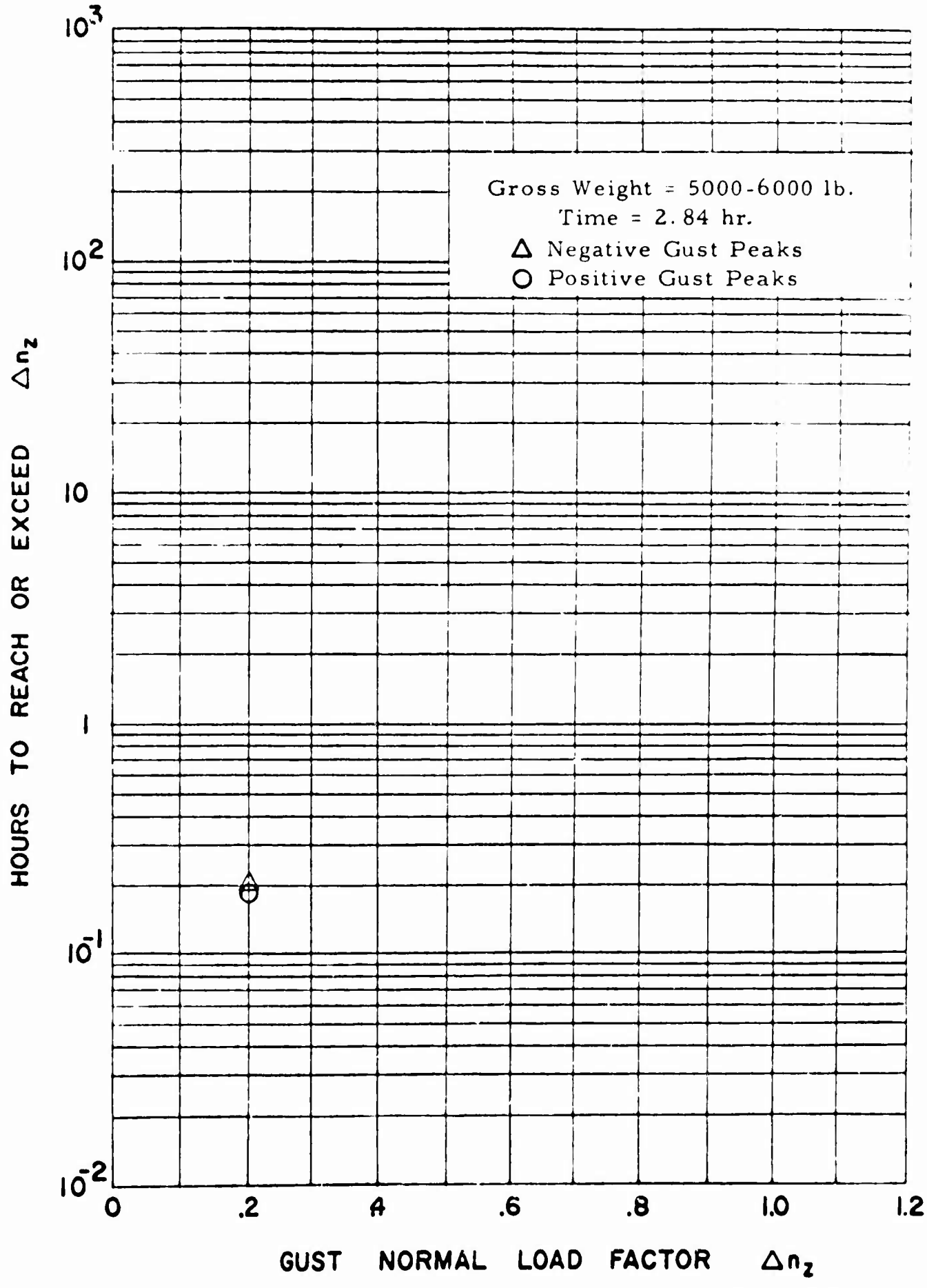


Figure 36. Exceedance Curves for Incremental Gust Normal Load Factor Peaks in the 5000-6000-Pound Gross Weight Range.

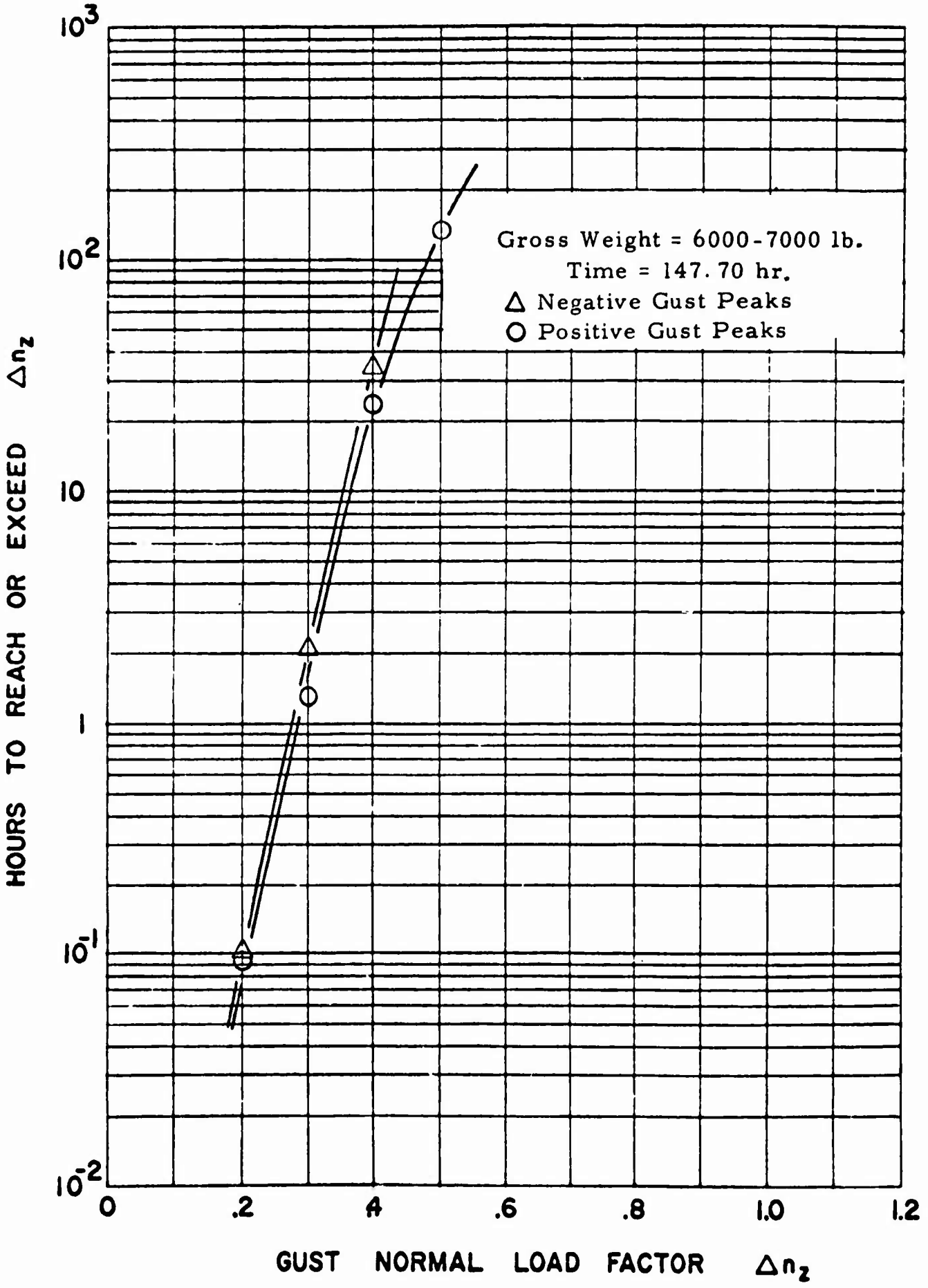


Figure 37. Exceedance Curves for Incremental Gust Normal Load Factor Peaks in the 6000-7000-Pound Gross Weight Range.

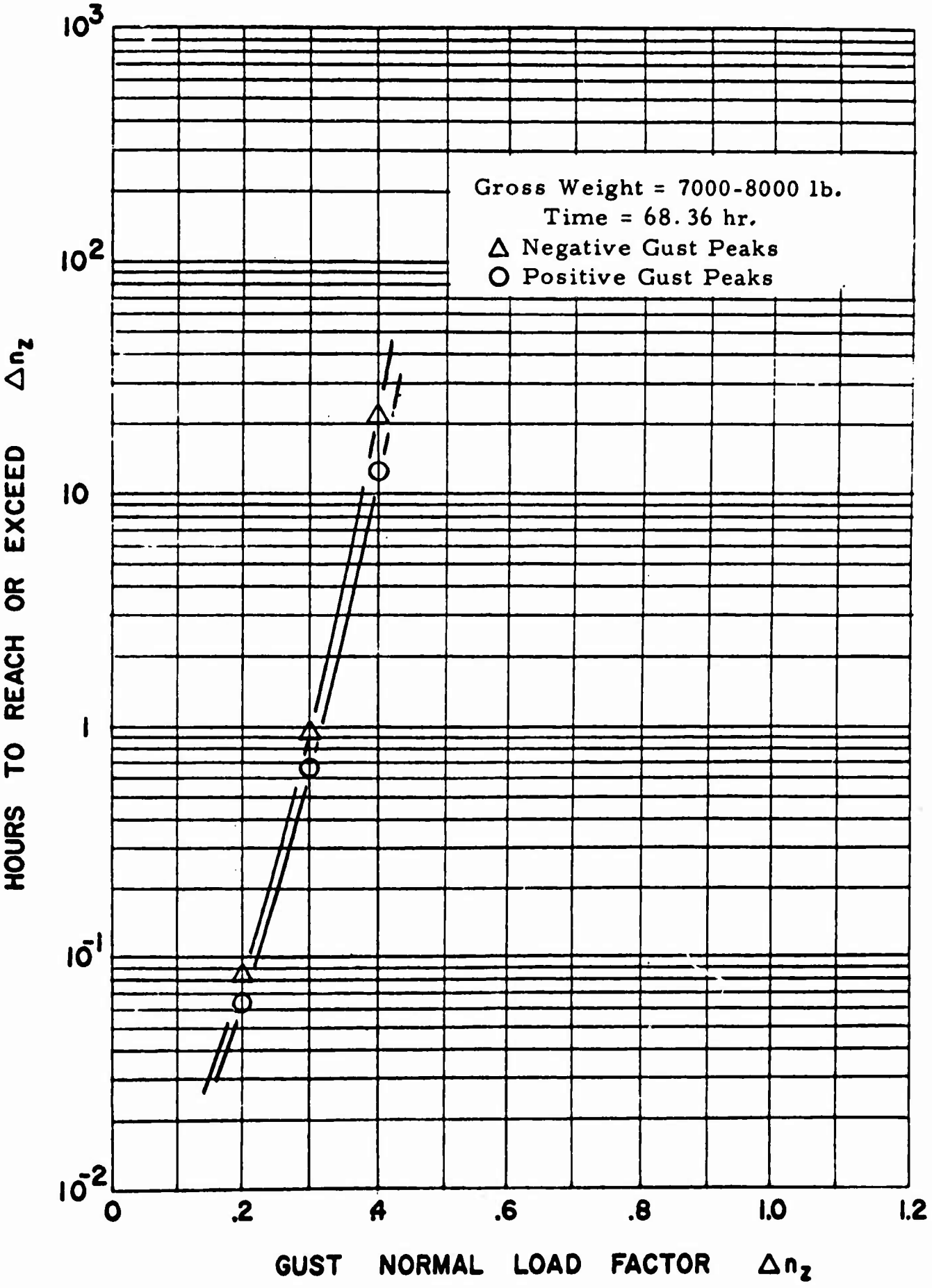


Figure 38. Exceedance Curves for Incremental Gust Normal Load Factor Peaks in the 7000-8000-Pound Gross Weight Range.

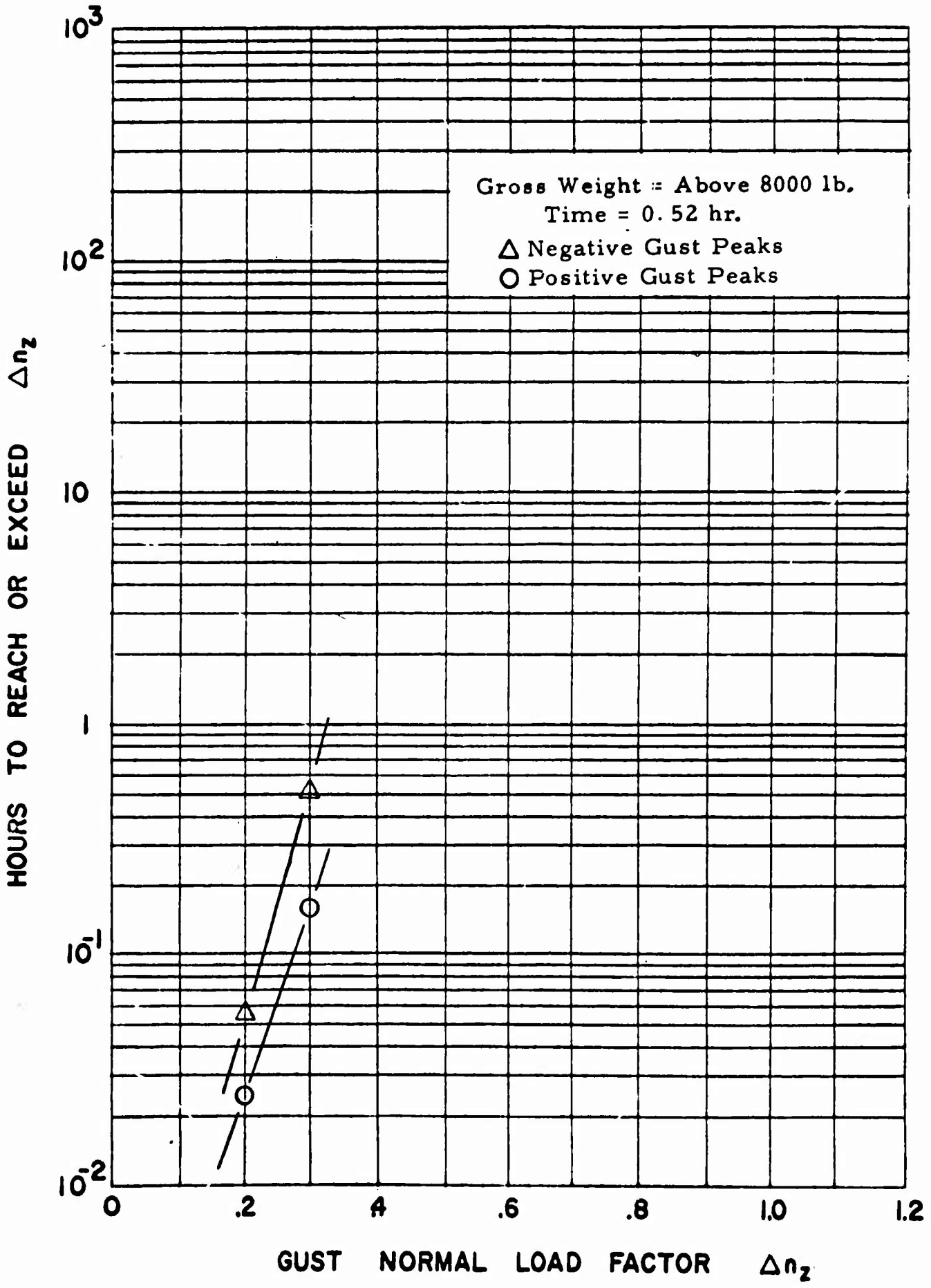


Figure 39. Exceedance Curves for Incremental Gust Normal Load Factor Peaks in the Above-8000-Pound Gross Weight Range.

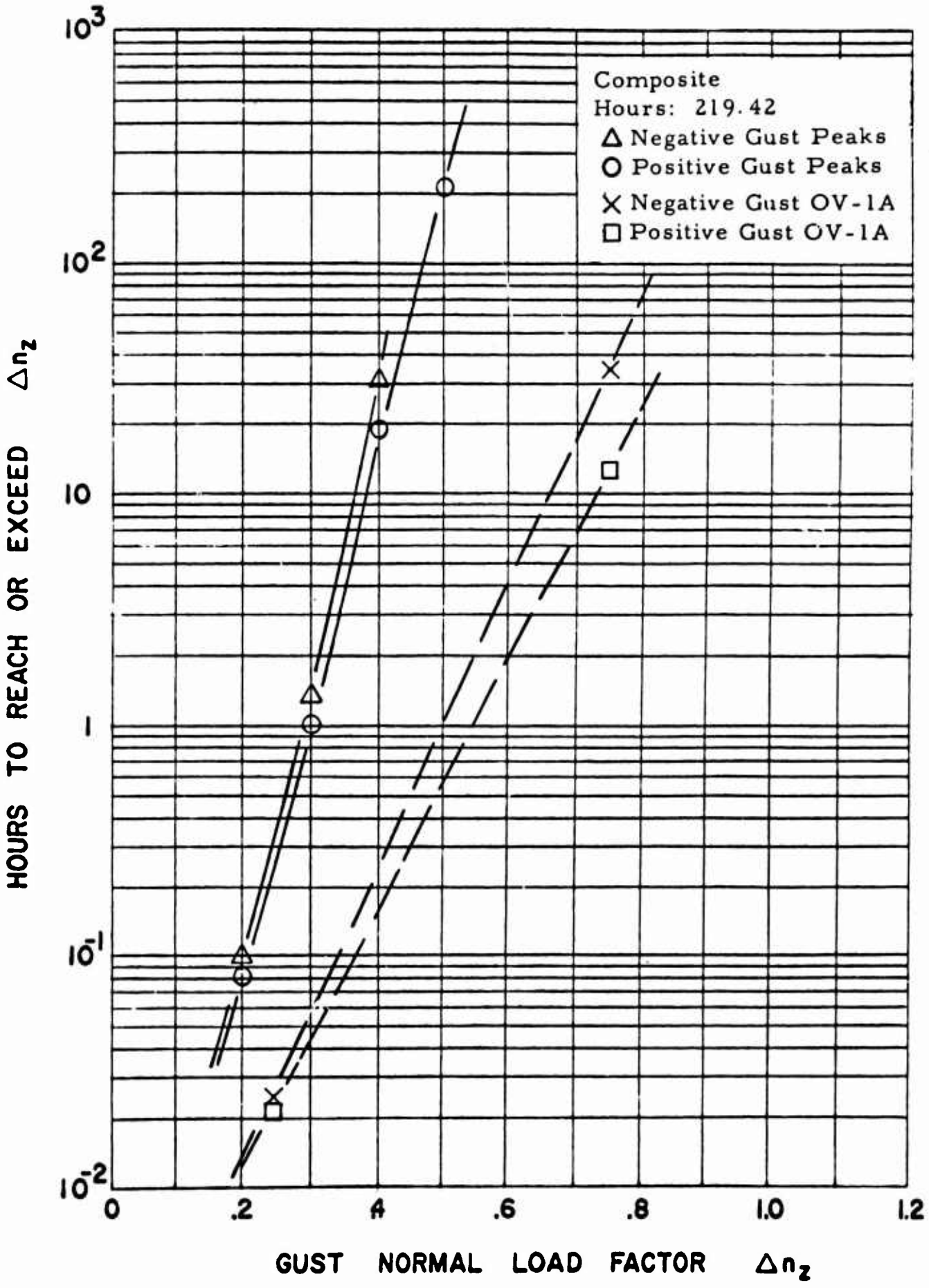
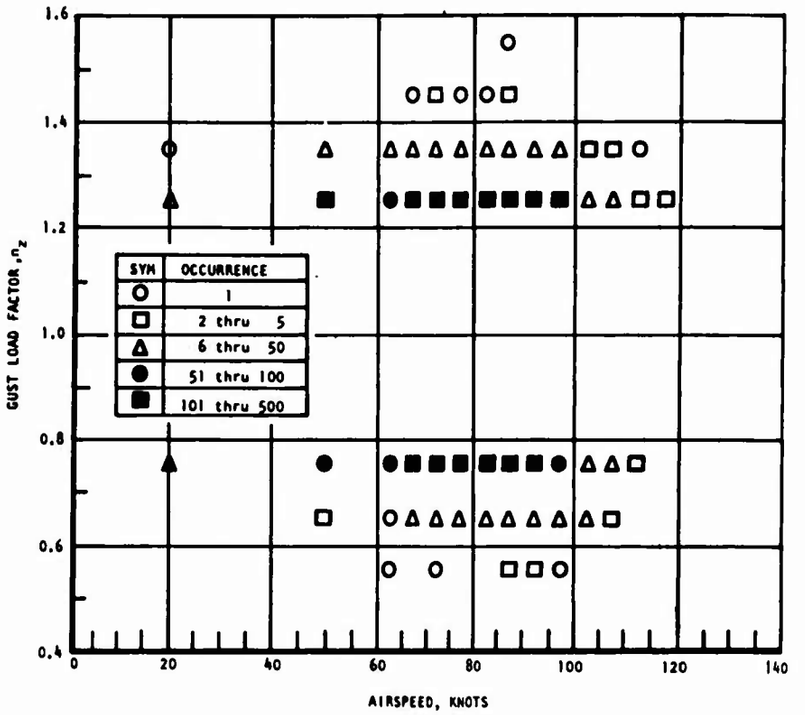


Figure 40. Composite Exceedance Curves for UH-1B and OV-1A Incremental Gust Normal Load Factor Peaks.



GUST LOAD FACTOR n_z	AIRSPEED, KNOTS														TOTAL n_z
	LESS THAN 40	40 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 to 90	90 to 95	95 to 100	100 to 105	105 to 110	110 to 115	115 to 120	
1.5 to 1.6								1							1
1.4 to 1.5				1	2	1	1	5							10
1.3 to 1.4	1	7	12	14	29	34	21	30	21	15	5	4	1		194
1.2 to 1.3	29	112	89	241	334	448	415	414	214	115	46	13	4	2	2476
0.8 to 1.2															
0.7 to 0.8	10	64	79	149	283	352	394	333	167	75	42	6	3		1957
0.6 to 0.7		3	1	14	15	20	16	27	20	12	6	3			137
0.5 to 0.6			1		1			2	2	1					7
0.4 to 0.5															
TOTAL	40	186	182	419	664	855	847	812	424	218	99	26	8	2	4782

Figure 41. Diagram and Tabulation of UH-1B Gust Normal Load Factor Peaks in Ranges of Indicated Airspeed.

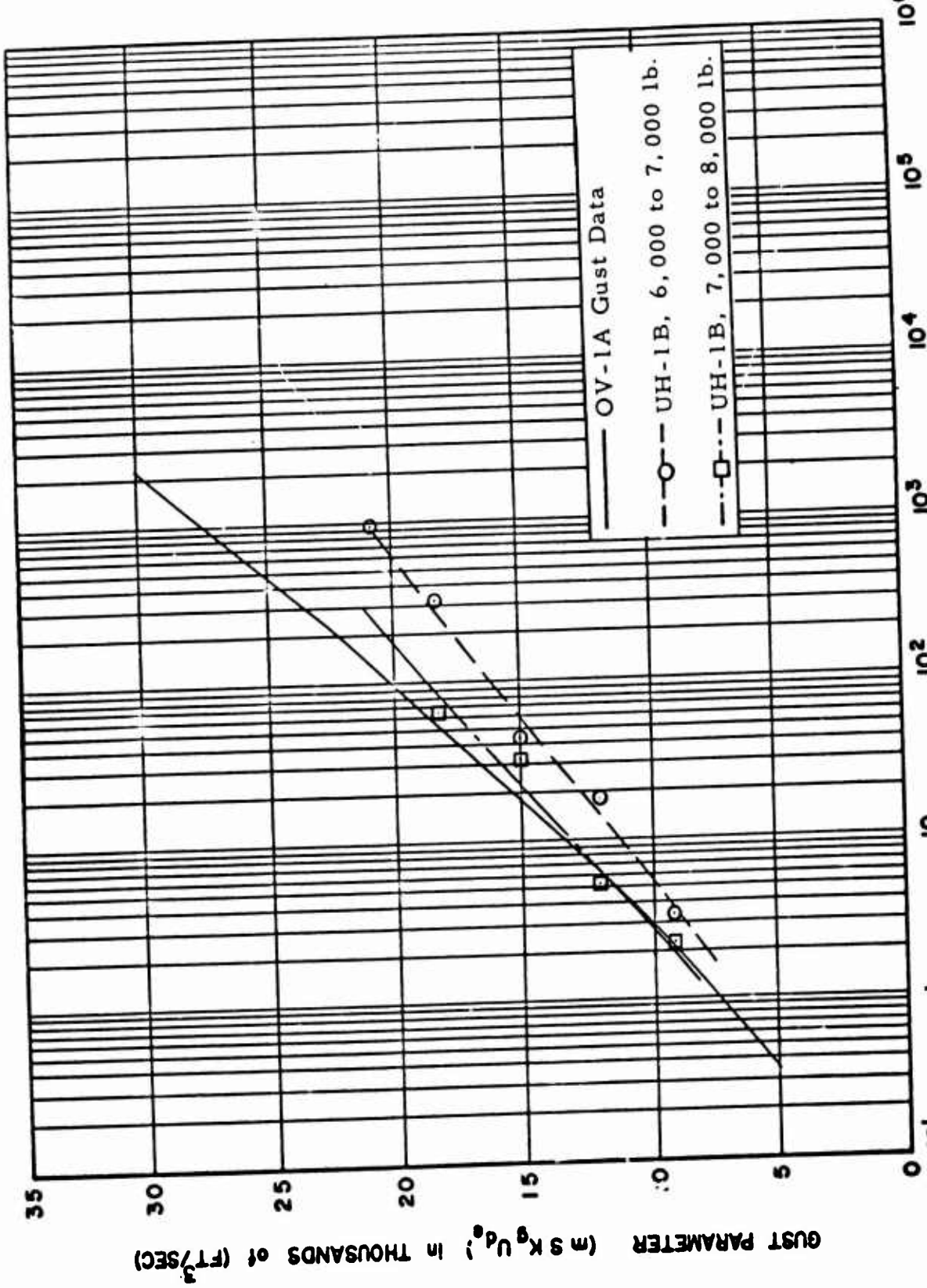


Figure 42. Distance to Reach or Exceed Gust Parameter Values for UH-1B and CV-1A Data in the Less-Than-1000-Foot Altitude Range.

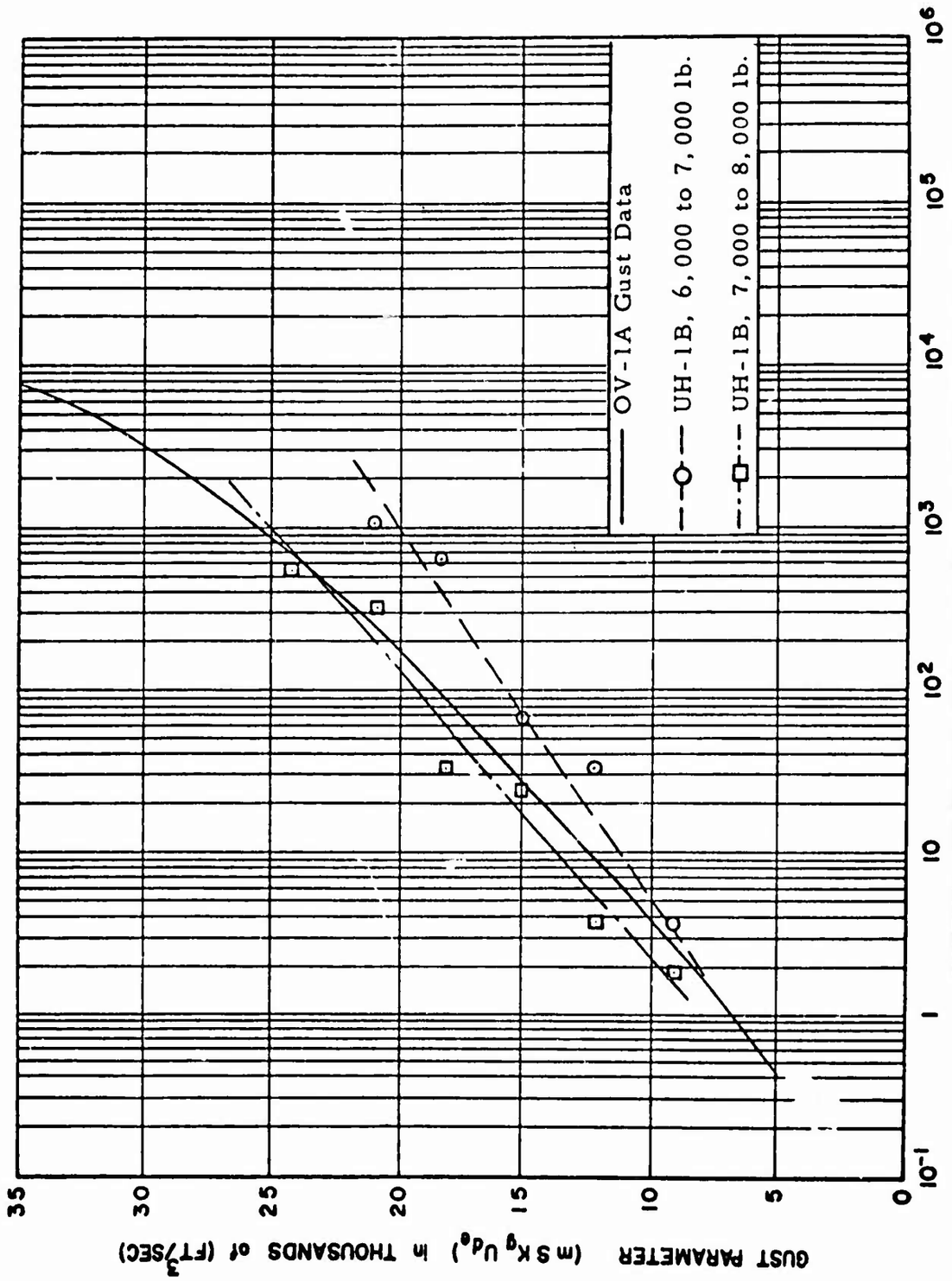


Figure 43. Distance to Reach or Exceed Gust Parameter Values for UH-1B and OV-1A Data in the 1000-2000-Foot Altitude Range.

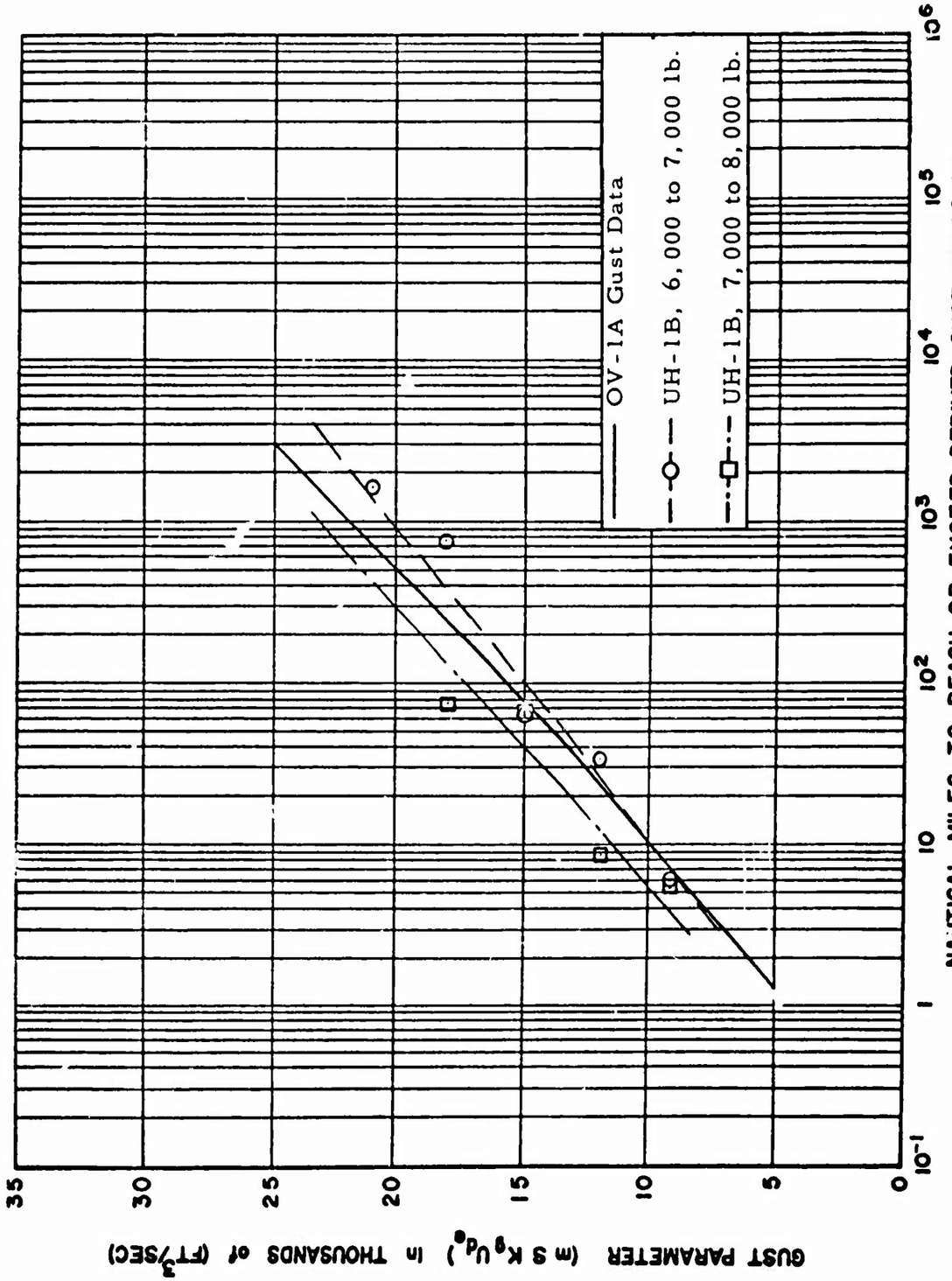


Figure 44. Distance to Reach or Exceed Gust Parameter Values for UH-1B and OV-1A Data in the 2000-5000-Foot Altitude Range.

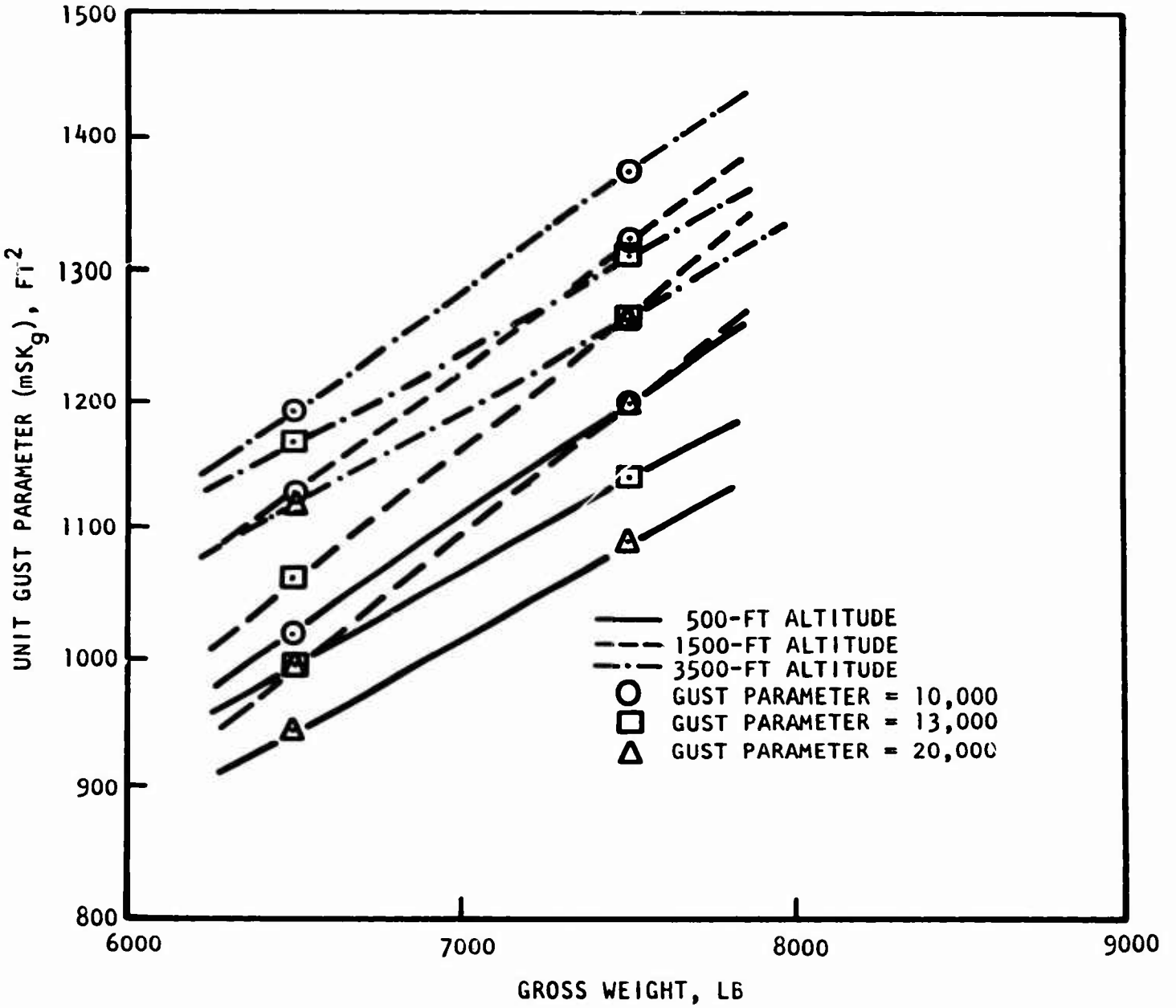


Figure 45. Plot of UH-1B Unit Gust Parameter by Gross Weight, Altitude, and Gust Parameter Values.

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APPENDIX I

INSTRUCTIONS FOR READING COMPUTER PRINTOUTS AND TABLES II THROUGH XXXVI

All times shown are in minutes unless otherwise specified. Values of time have been rounded off to the nearest tenth of a minute. Thus, the time totals, which were first summed and then rounded, may not agree with the individual rounded values shown by some fraction of a minute. The method used assures that any value shown is within .05 minute of the correct value. A time value between 0 and 0.5 minute was printed as "0.0", while a time equal to zero was printed as "0".

Tables having neither points nor zero time were not included. Table headings are arranged so that the first parameter given has its ranges printed vertically at the left of the table, the second parameter in the heading has its ranges printed across the top of the table, and any other parameters shown will be followed by their respective ranges in the heading. Thus, the UH-1B table heading "n_z Gust Peaks Versus Velocity by Mission Segment Ascent, Altitude Less, Weight 7000" indicates the number of gust n_z peaks in selected airspeed ranges for ascent, altitude below 1000 feet, and weights from 7000 to 8000 pounds.

The range codes for the various parameters are also given in the following tables.

TABLE II

TIME(MINUTES) FOR MISSION SEGMENT VS ALTITUDE TOTAL

	LESS	5000	6000	7000	8000	TOTAL
ASCENT		3.7	360.7	333.4	1.3	699.1
MANUVR		5.9	895.2	683.9	19.4	1604.4
DESCNT		30.2	746.7	290.9	0.7	1068.9
STEADY		140.1	6859.4	2793.6	9.5	9802.6
TOTAL		170.3	8862.1	4101.7	30.9	13164.9

TABLE III

TIME(MINUTES) FOR ALTITUDE VS VELOCITY BY WEIGHT 5000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
LESS	11.1	0.2	0.2	1.4	3.1	6.8	6.4	5.6	5.5	1.8	1.4	0.9				44.5
1000	4.7		0.2	1.4	1.6	3.1	6.3	17.4	19.9	5.7	0.0					60.4
2000			0.8	2.1	7.1	9.7	7.4	7.3	0.7	0.1						35.2
5000																
10000																
15000																
TOTAL	15.8	0.2	1.2	4.9	11.9	19.6	20.1	30.4	26.1	7.5	1.5	0.9				140.1

TIME(MINUTES) FOR ALTITUDE VS VELOCITY BY WEIGHT 6000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
LESS	175.2	38.5	47.5	78.4	185.3	479.6	410.2	165.1	80.8	46.7	14.1	6.4	5.8	0.8		1734.3
1000	74.9	30.5	35.9	76.5	161.3	423.0	513.8	349.7	122.1	36.8	9.7	1.7	0.4			1836.2
2000	28.8	33.7	69.4	184.2	381.9	687.5	668.3	527.3	240.8	78.0	16.2	6.0	1.1			2923.0
5000		0.5	0.5	1.9	13.4	74.3	133.0	109.5	29.6	1.6						366.3
10000																
15000																
TOTAL	278.9	103.2	153.3	341.0	743.9	1664.3	1725.2	1151.5	473.3	163.1	40.0	14.0	7.3	0.8		6859.7

TIME(MINUTES) FOR ALTITUDE VS VELOCITY BY WEIGHT 7000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
LESS	55.3	14.4	12.6	14.4	37.0	105.6	173.4	99.9	52.4	34.7	6.1	2.5	1.8	1.0		640.9
1000	106.1	35.6	34.8	58.7	104.3	128.5	198.4	202.6	67.3	12.3	0.8	0.5				949.6
2000	24.7	25.4	43.0	104.6	164.5	266.5	229.3	197.0	117.5	22.5	3.0	0.3	0.1			1198.4
5000					2.7	0.8	1.5									4.7
10000																
15000																
TOTAL	216.1	75.4	90.3	177.6	308.4	501.3	602.4	499.5	237.3	69.5	9.9	3.2	1.9	1.0		2793.6

TIME(MINUTES) FOR ALTITUDE VS VELOCITY BY WEIGHT 8000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
LESS																
1000					1.1	1.3	2.1	2.4	2.5							9.5
2000																
5000																
10000																
15000																
TOTAL					1.1	1.3	2.1	2.4	2.5							9.5

TIME(MINUTES) FOR ALTITUDE VS VELOCITY BY WEIGHT TOTAL

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
LESS	271.6	52.1	60.3	94.2	225.4	591.9	590.0	270.5	138.7	83.2	21.6	9.8	7.6	1.8		2419.6
1000	185.6	66.1	70.9	136.5	268.3	556.0	720.6	572.1	211.9	54.7	10.3	2.1	0.4			2855.7
2000	53.4	59.1	113.2	291.0	553.5	963.7	904.9	731.7	358.9	100.6	19.3	6.2	1.2			4156.6
5000		0.5	0.5	1.9	18.0	75.1	134.3	109.5	29.6	1.6						371.0
10000																
15000																
TOTAL	510.7	178.0	244.8	523.5	1065.2	2186.6	2349.8	1683.8	739.1	240.1	51.3	18.2	9.2	1.8		9802.9

TABLE IV

TIME(MINUTES) FOR COLLECTIVE VS CYCLIC BY CLIMB -2500

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
10											
20											
30					0.1						0.1
40				0.1	0.1						0.2
50			0.1	0.4							0.5
60				0.1							0.1
70											
80											
90											
TOTAL			0.1	0.6	0.2						0.9

TABLE IV, contd.

TIME(MINUTES) FOR COLLECTIVE VS CYCLIC BY CLIMB -2000

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
10											
20											
30					C.1						0.1
40				C.2							0.2
50			0.1	0.7	C.1						0.9
60				C.3	C.1						0.4
70											
80											
90											
TOTAL			0.1	1.2	C.3						1.6

TIME(MINUTES) FOR COLLECTIVE VS CYCLIC BY CLIMB -1500

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
10					C.2						0.2
20											
30				C.5	1.C	0.3					1.8
40				2.4	2.2		0.1				4.7
50			1.2	3.2	C.6	0.1					5.0
60			C.5	C.9		0.1					1.5
70			0.5	C.1							0.6
80											
90											
TOTAL			2.2	7.1	3.9	0.5	C.1				13.8

TIME(MINUTES) FOR COLLECTIVE VS CYCLIC BY CLIMB -1000

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
10					2.C						2.0
20				1.C	1.0						2.0
30			1.2	18.2	15.2	0.8					35.4
40		0.1	4.1	51.0	22.9	4.2	1.4	0.1			83.9
50		0.2	14.5	37.1	8.6	1.6	C.4				62.5
60			11.8	9.4	C.7						22.0
70			1.5	C.3							1.8
80											
90											
TOTAL		0.3	33.2	117.0	5C.4	6.7	1.8	0.1			209.6

TIME(MINUTES) FOR COLLECTIVE VS CYCLIC BY CLIMB -500

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
10					C.1						0.1
20				2.C	4.8	1.4					8.2
30			5.2	150.9	206.3	43.3	6.9	0.2			412.8
40		0.2	120.5	2C75.5	1005.8	207.2	40.0	1.7			3450.9
50		2.5	462.7	233C.4	762.2	144.3	41.0	0.2	0.9		3744.4
60		1.3	405.4	994.7	107.0	22.5	5.0				1535.9
70		0.3	54.1	65.9	1.8	C.1					122.2
80			0.1								0.1
90											
TOTAL		4.3	1048.1	5619.6	2088.0	418.7	92.9	2.1	0.9		9274.6

TIME(MINUTES) FOR COLLECTIVE VS CYCLIC BY CLIMB LESS

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
10											
20											
30											
40				C.1							C.1
50				C.1							C.1
60				C.1							0.1
70											
80											
90											
TOTAL				C.2							0.2

TIME(MINUTES) FOR COLLECTIVE VS CYCLIC BY CLIMB 500

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
10											
20											
30				1.4	3.4	C.2					5.0
40			1.1	5C.3	39.1	3.3	C.9	0.1			94.8
50			11.5	73.7	22.9	3.5	C.5				112.1
60			15.8	32.2	9.4	0.3					57.7
70			3.5	6.9	C.4	0.3	0.1				11.2
80											
90											
TOTAL			31.9	164.4	75.1	7.6	1.5	0.1			280.7

TIME(MINUTES) FOR COLLECTIVE VS CYCLIC BY CLIMB 1000

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
10											
20											
30				0.1	C.1						0.2
40				2.C	3.3	0.2					5.5
50			0.7	5.7	2.6	0.1	0.1				9.2
60			0.6	2.C	C.8						3.4
70			1.C								1.0
80											
90											
TOTAL			2.3	9.8	6.7	0.3	0.1				19.2

TIME(MINUTES) FOR COLLECTIVE VS CYCLIC BY CLIMB 1500

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
10											
20											
30											
40				0.2							0.2
50				0.5	C.1						0.6
60				0.8							0.8
70											
80											
90											
TOTAL				1.5	0.1						1.6

TABLE IV, contd.

TIME(MINUTES) FOR COLLECTIVE VS CYCLIC BY CLIMB 2000

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
10											
20											
30											
40				0.3							0.3
50			0.1								0.1
60											
70											
80											
90											
TOTAL			0.1	0.3							0.4

TIME(MINUTES) FOR COLLECTIVE VS CYCLIC BY CLIMB 2500

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
10											
20											
30											
40				0.1							0.1
50						0.1					0.1
60											
70											
80											
90											
TOTAL				0.1		0.1					0.2

TIME(MINUTES) FOR COLLECTIVE VS CYCLIC BY CLIMB TOTAL

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
10					2.3						2.3
20				3.0	5.9	1.4					10.2
30			6.4	171.1	226.2	44.6	6.9	0.2			455.4
40		0.3	125.9	2181.8	1073.4	214.9	42.4	1.9			3640.5
50		2.8	490.9	2452.4	797.0	149.7	42.0	0.2	0.9		3935.7
60		1.3	434.3	1040.5	116.0	22.9	5.0				1622.0
70		0.3	60.6	73.3	2.2	0.4	0.1				136.8
80			0.1								0.1
90											
TOTAL		4.7	1118.0	5921.9	2224.9	433.8	96.4	2.4	0.9		9802.9

TABLE V

TIME(MINUTES) FOR RPM VS CLIMB BY TEMPERATURE 10

	LESS	-2500	-2000	-1500	-1000	-500	500	1000	1500	2000	2500	TOTAL
LESS												
300						1.5	0.8					2.3
310					1.1	9.3	0.8					11.2
320					0.2	1.5						1.7
330												
340												
TOTAL					1.3	12.3	1.6					15.2

TIME(MINUTES) FOR RPM VS CLIMB BY TEMPERATURE 20

	LESS	-2500	-2000	-1500	-1000	-500	500	1000	1500	2000	2500	TOTAL
LESS												
300						9.7						9.7
310			0.1	0.7	5.2	162.2	8.9	0.4				177.5
320					0.6	18.3	0.5					19.4
330												
340												
TOTAL			0.1	0.7	5.8	190.2	9.4	0.4				206.6

TIME(MINUTES) FOR RPM VS CLIMB BY TEMPERATURE 30

	LESS	-2500	-2000	-1500	-1000	-500	500	1000	1500	2000	2500	TOTAL
LESS												
300						19.8		0.2				20.0
310	0.1	0.1	0.3	2.5	21.3	646.8	25.7	1.8		0.1		698.7
320			0.1	0.6	4.3	256.6	5.1					266.7
330												
340												
TOTAL	0.1	0.1	0.4	3.1	25.6	923.2	30.8	2.0		0.1		985.4

TIME(MINUTES) FOR RPM VS CLIMB BY TEMPERATURE 40

	LESS	-3000	-2000	-1500	-1000	-500	500	1000	1500	2000	2500	TOTAL
LESS		0.1										0.1
300		0.1				3.9		0.2				4.2
310		0.1		1.6	16.8	722.2	26.7	0.5	0.2			768.0
320				0.4	2.7	206.3	5.7	0.2				215.2
330												
340												
TOTAL		0.2		2.0	19.5	932.4	32.3	0.9	0.2			987.5

TABLE V, contd.

TIME(MINUTES) FOR RPM VS CLIMB BY TEMPERATURE 50

	LESS	-2500	-2000	-1500	-1000	-500	500	1000	1500	2000	2500	TOTAL
LESS						1.0	0.1					1.1
300			0.1		3.0	52.5	3.0					58.7
310			0.2	0.4	19.9	846.9	21.8	1.3				890.5
320			0.1	0.6	17.5	473.3	6.7	1.4			0.1	499.7
330					0.3	9.9	0.2					10.4
340												
TOTAL			0.3	1.1	40.7	1383.6	31.9	2.7			0.1	1460.4

TIME(MINUTES) FOR RPM VS CLIMB BY TEMPERATURE 60

	LESS	-2500	-2000	-1500	-1000	-500	500	1000	1500	2000	2500	TOTAL
LESS						2.3	0.1					2.4
300				0.3	1.7	153.3	4.9	0.9	0.8			161.8
310		0.1		1.5	16.9	1427.3	37.6	2.4			0.1	1488.0
320				0.5	15.9	695.8	19.3	1.3				732.8
330					1.3	18.6	0.2					20.0
340												
TOTAL		0.1		2.3	37.8	2297.3	62.1	4.6	0.8		0.1	2405.0

TIME(MINUTES) FOR RPM VS CLIMB BY TEMPERATURE 70

	LESS	-2500	-2000	-1500	-1000	-500	500	1000	1500	2000	2500	TOTAL
LESS						1.4						1.4
300	0.1			0.1	4.1	253.2	6.1	0.3				263.9
310	0.1	0.1	0.5	1.1	22.6	1291.7	34.8	2.0	0.4	0.1		1353.3
320		0.2	0.2	1.3	15.0	717.0	17.9	1.3				752.8
330					1.4	8.6	1.2					11.2
340												
TOTAL	0.1	0.3	0.7	2.5	43.1	2271.9	60.1	3.5	0.4	0.1		2382.7

TIME(MINUTES) FOR RPM VS CLIMB BY TEMPERATURE 80

	LESS	-2500	-2000	-1500	-1000	-500	500	1000	1500	2000	2500	TOTAL
LESS						0.9	0.1					1.0
300				0.7	5.4	147.8	3.5	0.7				158.1
310			0.1	0.5	17.0	731.0	27.6	2.2	0.2	0.2		778.8
320		0.2		0.5	6.7	227.2	11.1	0.7				246.4
330					0.4	1.3						1.7
340												
TOTAL		0.2	0.1	1.7	29.5	1108.2	42.3	3.6	0.2	0.2		1186.0

TIME(MINUTES) FOR RPM VS CLIMB BY TEMPERATURE 90

	LESS	-2500	-2000	-1500	-1000	-500	500	1000	1500	2000	2500	TOTAL
LESS												
300					0.1	17.4	0.3					17.8
310				0.4	0.1	108.6	7.5	1.5				124.2
320				0.1	0.2	29.5	2.4					32.2
330												
340												
TOTAL				0.5	0.4	155.5	10.3	1.5				174.2

TIME(MINUTES) FOR RPM VS CLIMB BY TEMPERATURE TOTAL

	LESS	-2500	-2000	-1500	-1000	-500	500	1000	1500	2000	2500	TOTAL
LESS		5.1				5.6	0.3					5.9
300	0.1	0.1	0.1	1.1	14.3	639.2	14.6	2.2	0.8			696.5
310	0.1	0.4	1.0	3.6	120.9	5946.0	191.4	12.2	0.3	0.4	0.1	6290.2
320		0.4	0.3	4.1	62.4	2676.5	68.8	4.8			0.1	2767.0
330					1.1	38.4	1.6					43.4
340												
TOTAL	0.2	0.9	1.6	13.1	206.6	9274.7	280.7	19.2	1.6	0.4	0.2	9802.9

TABLE VI

TIME(MINUTES) FOR CT/S VERSUS MU BY CLIMB -2500

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
LESS									
0.06					0.7	0.2			0.9
0.09									
0.12									
0.15									
TOTAL					0.7	0.2			0.9

TIME(MINUTES) FOR CT/S VERSUS MU BY CLIMB -2000

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
LESS									
0.06				0.4	1.0	0.2			1.6
0.09									
0.12									
0.15									
TOTAL				0.4	1.0	0.2			1.6

TIME(MINUTES) FOR CT/S VERSUS MU BY CLIMB -1500

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
LESS									
0.06		0.5		1.7	7.5	3.9	0.2		13.8
0.09									
0.12									
0.15									
TOTAL		0.5		1.7	7.5	3.9	0.2		13.8

TIME(MINUTES) FOR CT/S VERSUS MU BY CLIMB -1000

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
LESS		0.1							0.1
0.06		5.6	0.7	12.6	144.1	46.0	0.5		209.5
0.09									
0.12									
0.15									
TOTAL		5.7	0.7	12.6	144.1	46.0	0.5		209.6

TIME(MINUTES) FOR CT/S VERSUS MU BY CLIMB -500

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
LESS		5.6	0.9	0.2	11.4				18.1
0.06	1.2	431.9	58.6	356.1	6308.8	2058.5	16.2		9231.4
0.09		0.8	0.1		16.9	7.1			24.9
0.12									
0.15									
TOTAL	1.2	438.3	59.6	356.3	6337.1	2065.6	16.2		9274.5

TIME(MINUTES) FOR CT/S VERSUS MU BY CLIMB LESS

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
LESS									
0.06					0.2	0.1			0.2
0.09									
0.12									
0.15									
TOTAL					0.2	0.1			0.2

TIME(MINUTES) FOR CT/S VERSUS MU BY CLIMB 500

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
LESS					0.4				0.4
0.06		7.4	3.2	50.2	189.1	29.4	0.4		279.8
0.09					0.5				0.5
0.12									
0.15									
TOTAL		7.4	3.2	50.2	190.0	29.4	0.4		280.7

TIME(MINUTES) FOR CT/S VERSUS MU BY CLIMB 1000

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
LESS									
0.06		0.4		3.0	13.5	2.2			19.2
0.09									
0.12									
0.15									
TOTAL		0.4		3.0	13.5	2.2			19.2

TIME(MINUTES) FOR CT/S VERSUS MU BY CLIMB 1500

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
LESS									
0.06					1.6				1.6
0.09									
0.12									
0.15									
TOTAL					1.6				1.6

TIME(MINUTES) FOR CT/S VERSUS MU BY CLIMB 2000

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
LESS									
0.06					0.4				0.4
0.09									
0.12									
0.15									
TOTAL					0.4				0.4

TIME(MINUTES) FOR CT/S VERSUS MU BY CLIMB 2500

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
LESS									
0.06					0.2				0.2
0.09									
0.12									
0.15									
TOTAL					0.2				0.2

TIME(MINUTES) FOR CT/S VERSUS MU BY CLIMB TOTAL

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
LESS		5.7	0.9	0.2	11.5				18.3
0.06	1.2	445.7	62.3	424.1	6667.2	2140.6	17.3		9758.7
0.09		0.8	0.1		17.4	7.1			25.4
0.12									
0.15									
TOTAL	1.2	452.3	63.5	424.3	6696.4	2147.7	17.3		9802.3

TABLE VII

CYCLIC PEAKS VS CYCLIC STEADY BY COLL. STEADY 20

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40											
-30											
-20						2					2
-10					2	1					3
10					1						1
20											
30											
40											
TOTAL					3	3					6
TIME	0.	0.	0.	3.0	5.9	1.4	0.	0.	0.	0.	10.2

CYCLIC PEAKS VS CYCLIC STEADY BY COLL. STEADY 30

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40											
-30						1					1
-20						5	2				7
-10				2	16	20	9				47
10				2	4	9	2				17
20						1					1
30						1					1
40											
TOTAL				4	20	37	13				74
TIME	0.	0.	6.4	171.1	226.2	44.6	6.9	0.3	0.	0.	455.4

CYCLIC PEAKS VS CYCLIC STEADY BY COLL. STEADY 40

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40											
-30							1				1
-20				3	16	20	9				48
-10			2	36	71	106	38	1			257
10			1	74	33	54	10				122
20				3	4	2	1				10
30											
40											
TOTAL			3	69	124	182	59	1			438
TIME	0.	0.3	125.8	2181.7	1073.4	214.9	42.4	1.9	0.	0.	3640.5

CYCLIC PEAKS VS CYCLIC STEADY BY COLL. STEADY 50

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40											
-30					3	1					4
-20			3	6	18	12	7				46
-10			19	78	74	99	46	1	3		320
10			10	36	17	33	11				105
20			2	8	6	3					19
30					1	1					2
40											
TOTAL			34	128	117	149	64	1	3		496
TIME	0.	1.8	490.8	2452.4	797.0	149.7	42.0	0.2	0.9	0.	3935.7

CYCLIC PEAKS VS CYCLIC STEADY BY COLL. STEADY 60

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40											
-30											
-20				3	1	2	2				8
-10			5	33	12	15	5				70
10			6	12		4	2				25
20				6							6
30				1							1
40											
TOTAL			15	56	13	19	7				110
TIME	0.	1.3	434.3	1040.5	114.0	22.9	5.0	0.	0.	0.	1622.0

CYCLIC PEAKS VS CYCLIC STEADY BY COLL. STEADY 70

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40											
-30											
-20						1					1
-10					2						2
10			3								3
20											
30			1								1
40											
TOTAL			4	2		1					9
TIME	0.	0.2	60.6	73.3	1.2	0.4	0.1	0.	0.	0.	136.8

TABLE VIII

CYCLIC PEAKS VS CYCLIC STEADY BY ALTITUDE LESS

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40											
-30					1						1
-20			3	6	11	21	4				45
-10			24	41	59	70	49	2			245
10			14	19	29	47	16				125
20			1	3	5	4	1				14
30						1					1
40											
TOTAL			42	69	105	143	70	2			431
TIME	0.	1.1	23.4	1130.5	758.5	196.8	32.4	1.9	0.	0.	2419.6

CYCLIC PEAKS VS CYCLIC STEADY BY ALTITUDE 1000

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40											
-30					2	2	1				5
-20				4	20	17	12				53
-10			4	56	96	144	37		3		332
10			4	21	23	44	5				96
20				5	5	2					12
30				1	1	1					3
40											
TOTAL			8	89	136	210	55		3		501
TIME	0.	3.3	355.4	1634.9	638.2	193.6	29.4	0.1	0.9	0.	2855.7

CYCLIC PEAKS VS CYCLIC STEADY BY ALTITUDE 2000

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40											
-30											
-20				2	4	4	4				14
-10			2	54	30	25	10				121
10			4	35	7	9	4				54
20			1	9							10
30			1								1
40											
TOTAL			8	100	36	38	18				200
TIME	0.	0.2	492.8	2801.2	804.0	43.4	14.6	0.3	0.	0.	4156.5

CYCLIC PEAKS VS CYCLIC STEADY BY ALTITUDE 5000

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40											
-30											
-20											
-10				1							1
10											
20											
30											
40											
TOTAL				1							1
TIME	0.	0.	38.3	305.4	27.3	0.	0.	0.	0.	0.	371.0

TABLE IX

CYCLIC PEAKS VS CYCLIC STEADY BY VELOCITY LESS

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40											
-30					3	2	1				6
-20					24	36	20				80
-10				1	80	233	96	2	3		415
10				4	34	97	25				160
20			1	2	8	6	1				18
30				1	1	2					4
40											
TOTAL			1	8	150	376	143	2	3		683
TIME	0.	0.	0.1	12.4	82.6	320.6	93.2	2.0	0.9	0.	510.7

CYCLIC PEAKS VS CYCLIC STEADY BY VELOCITY 65

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40											
-30											
-20				1							1
-10			1	18	14						33
10				9	2						11
20				3							3
30											
40											
TOTAL			1	31	16						48
TIME	0.	0.	5.0	241.5	261.3	13.5	2.0	0.2	0.	0.	523.5

CYCLIC PEAKS VS CYCLIC STEADY BY VELOCITY 40

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40											
-30											
-20						2					2
-10				2	13	1					16
10			1	7	4	1					13
20				3	2						5
30											
40											
TOTAL			1	12	19	4					36
TIME	0.	0.	1.0	38.5	116.4	22.9	0.	0.	0.	0.	178.8

CYCLIC PEAKS VS CYCLIC STEADY BY VELOCITY 70

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40											
-30											
-20				1		4	1				6
-10				3	21	29	2				55
10				1	17	3	2				23
20					5						5
30											
40											
TOTAL				5	43	36	5				89
TIME	0.	0.	0.	39.5	623.7	385.1	15.2	1.8	0.	0.	1065.2

CYCLIC PEAKS VS CYCLIC STEADY BY VELOCITY 60

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40											
-30											
-20						1					1
-10				7	15	2					24
10				4	6						10
20				3							3
30											
40											
TOTAL				14	21	3					38
TIME	0.	0.	1.4	83.8	146.8	9.7	0.	0.1	0.	0.	244.8

CYCLIC PEAKS VS CYCLIC STEADY BY VELOCITY 75

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40											
-30											
-20			1	4	2	2					9
-10			6	40	10	1					57
10			1	15	2						18
20				1							1
30											
40											
TOTAL			8	60	14	3					85
TIME	0.	0.	148.5	1483.1	541.6	12.0	0.4	0.	0.	0.	2186.6

TABLE IX, contd.

CYCLIC PEAKS VS CYCLIC STEADY BY VELOCITY 80

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40											
-30											
-20				2	2						4
-10			6	29	6						40
10			5	11	1						17
20			1								1
30											
40											
TOTAL			11	42	9						62
TIME	0.	0.1	306.3	1625.3	409.3	8.9	0.	0.	0.	0.	2349.8

CYCLIC PEAKS VS CYCLIC STEADY BY VELOCITY 95

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40											
-30											
-20				2	2						4
-10			1	5	1						7
10			4								4
20											
30											
40											
TOTAL			5	7	3						15
TIME	0.	1.7	110.0	119.7	8.7	0.	0.	0.	0.	0.	240.1

CYCLIC PEAKS VS CYCLIC STEADY BY VELOCITY 85

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40											
-30											
-20				1	1						2
-10			4	20	6						30
10			4	6	1						11
20											
30											
40											
TOTAL			8	27	8						43
TIME	0.	0.3	265.7	1178.5	212.4	26.9	0.	0.	0.	0.	1683.8

CYCLIC PEAKS VS CYCLIC STEADY BY VELOCITY 100

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40											
-30											
-20											
-10			1	3							4
10			3								3
20											
30											
40											
TOTAL			4	3							7
TIME	0.	0.6	36.7	13.9	0.1	0.	0.	0.	0.	0.	51.3

CYCLIC PEAKS VS CYCLIC STEADY BY VELOCITY 90

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40											
-30											
-20			1	2							3
-10			8	8	1						17
10			3	2							5
20											
30			1								1
40											
TOTAL			13	12	1						26
TIME	0.	1.7	179.3	497.6	56.1	4.3	0.	0.	0.	0.	739.1

CYCLIC PEAKS VS CYCLIC STEADY BY VELOCITY 105

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40											
-30											
-20											
-10			1								1
10											
20											
30											
40											
TOTAL			1								1
TIME	0.	0.1	14.6	3.0	0.4	0.	0.	0.	0.	0.	18.2

TABLE X

CYCLIC PEAKS VS CYCLIC STEADY BY RPM LESS

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40											
-30											
-20											
-10						3					3
10											
20											
30											
40											
TOTAL						3					3
TIME	0.	0.	0.4	0.5	1.3	3.5	0.2	0.	0.	0.	5.9

CYCLIC PEAKS VS CYCLIC STEADY BY RPM 300

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40											
-30						2					2
-20			1	2	1	9	1				14
-10			4	17	18	47	10				96
10			1	4	5	16	2				28
20											
30						1					1
40											
TOTAL			6	23	24	75	13				141
TIME	0.	0.9	149.1	396.0	81.7	54.0	14.8	0.	0.	0.	696.5

CYCLIC PEAKS VS CYCLIC STEADY BY RPM 310

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40											
-30					3						3
-20			2	8	29	19	16				74
-10			26	92	113	137	69	2	3		442
10			20	42	37	56	17				172
20			2	6	10	5					23
30				1	1	1					3
40											
TOTAL			50	149	193	218	102	2	3		717
TIME	0.	2.2	741.4	3733.4	1460.2	293.7	64.2	2.0	0.9	0.	6290.1

CYCLIC PEAKS VS CYCLIC STEADY BY RPM 320

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40											
-30							1				1
-20				2	6	14	3				24
-10				45	42	52	17				156
10			1	29	9	27	6				72
20				11		1	1				13
30			1								1
40											
TOTAL			2	87	56	94	29				267
TIME	0.	1.6	227.1	1759.4	871.7	91.6	15.2	0.3	0.	0.	2767.0

CYCLIC PEAKS VS CYCLIC STEADY BY RPM 330

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40											
-30											
-20											
-10					2						2
10					2	1					3
20											
30											
40											
TOTAL					4	1					5
TIME	0.	0.	0.	32.5	9.9	1.0	0.	0.	0.	0.	43.4

CYCLIC PEAKS VS CYCLIC STEADY BY RPM TOTAL

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40											
-30					3	2	1				6
-20			3	12	35	42	20				112
-10			30	154	175	259	96	2	3		699
10			22	76	53	100	25				276
20			2	17	10	6	1				36
30			1	1	1	2					5
40											
TOTAL			58	259	277	491	143	2	3		1133
TIME	0.	4.7	1118.0	5921.9	2374.9	439.0	98.4	2.4	0.9	0.	9980.2

TABLE XI

CYCLIC PEAKS VS ACCELERATION BY MISSION SEGMENT ASCENT

	LESS	-15.0	-12.0	-9.0	-6.0	-3.0	3.0	6.0	9.0	12.0	15.0	TOTAL
LESS												
-40						2						2
-30						38	7					45
-20					2	397	22	1				422
-10						320	7	2				329
10						163	1					164
20						4						4
30						1						1
40												
TOTAL					2	925	37	3				967

CYCLIC PEAKS VS ACCELERATION BY MISSION SEGMENT MANUVR

	LESS	-15.0	-12.0	-9.0	-6.0	-3.0	3.0	6.0	9.0	12.0	15.0	TOTAL
LESS						1						1
-40					3	31	2					36
-30					4	368	14	1				387
-20		1		2	19	1049	27					1098
-10				1	16	409	14					440
10					10	128	2					140
20						12						12
30												
40												
TOTAL		1		3	52	1998	59	1				2114

CYCLIC PEAKS VS ACCELERATION BY MISSION SEGMENT DESCNT

	LESS	-15.0	-12.0	-9.0	-6.0	-3.0	3.0	6.0	9.0	12.0	15.0	TOTAL
LESS						3						3
-40						5						5
-30						58	1					59
-20				2	11	488	1					502
-10					12	696						708
10				1	8	524						533
20						30						30
30												
40						1						1
TOTAL				3	31	1805	2					1841

TABLE XII

CYCLIC PEAKS VS RPM BY MISSION SEGMENT ASCENT

	LESS	300	310	320	330	340	TOTAL
LESS							
-40			1	1			2
-30		8	30	6			45
-20		101	256	63	1		422
-10		78	192	56			329
10		34	117	13			164
20			4				4
30			1				1
40							
TOTAL	3	221	601	142	1		967

CYCLIC PEAKS VS RPM BY MISSION SEGMENT MANUVR

	LESS	300	310	320	330	340	TOTAL
LESS				1			1
-40		2	27	7			36
-30	1	44	218	122	2		387
-20	3	102	569	409	15		1098
-10	2	37	227	169	5		440
10	3	36	74	27			140
20	1	5	6				12
30							
40							
TOTAL	10	226	1121	735	22		2114

CYCLIC PEAKS VS RPM BY MISSION SEGMENT DESCNT

	LESS	300	310	320	330	340	TOTAL
LESS	1	1	1				3
-40	1	1	1	2			5
-30	2	6	40	11			59
-20		72	299	122	9		502
-10	2	64	429	198	15		708
10	2	71	300	155	5		533
20	1	7	17	5			30
30							
40				1			1
TOTAL	9	222	1087	494	29		1841

TABLE XIII

CYCLIC PEAKS VS VELOCITY BY MISSION SEGMENT ASCENT

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
LESS																
-40		1								1						2
-30	8	6	6	5	7	5	6		1	1						45
-20	181	117	43	31	25	20	4		1							422
-10	281	30	10	5		3										329
10	161	3														164
20	4															4
30	1															1
40																
TOTAL	636	157	59	41	32	28	10		2	2						967

CYCLIC PEAKS VS VELOCITY BY MISSION SEGMENT MANUVR

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
LESS			1													1
-40			1	4	2	2	6	6	9	5	1					36
-30	2	11	21	28	65	76	73	64	32	10	3	1				387
-20	63	110	110	183	247	179	132	69	21	3		1				1098
-10	99	133	53	65	40	28	20		2							440
10	71	38	5	6	10	7	2	1								140
20	3	1				1		1								12
30																
40																
TOTAL	225	293	191	286	364	293	233	141	64	18	4	2				2114

CYCLIC PEAKS VS VELOCITY BY MISSION SEGMENT DESCNT

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
LESS						2	1									3
-40	2			1	1	1										5
-30	13	1		3	6	10	17	2	1	2						59
-20	273	47	34	44	51	34	14	2	2	1						502
-10	512	111	25	22	16	17	2	1	2							708
10	466	57	6	1	1	1			1							533
20	28	2														30
30																
40	1															1
TOTAL	1293	218	65	71	75	65	34	5	6	3						1841

TABLE XIV

COLLECTIVE PEAKS VS COLL.STEADY BY CYCLIC STEADY 20

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS						1					1
-40						2		2			4
-30							1	2			3
-20					2	17	5				24
-10					6	16	5	2			27
10					2	7					9
20						1					1
30											
40											
TOTAL					8	44	11	6			69
TIME	0.	0.	0.	6.4	125.8	490.8	434.3	60.6	0.1	0.	1118.0

COLLECTIVE PEAKS VS COLL.STEADY BY CYCLIC STEADY 30

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS						4	2				6
-40					1	5	1				7
-30					4	13	9				26
-20				4	36	67	24	1			132
-10				11	71	125	43	1			251
10				1	19	25	2				47
20					1						1
30											
40											
TOTAL				16	132	239	81	2			470
TIME	0.	0.	3.0	171.1	2181.7	2452.4	1040.5	73.3	0.	0.	5921.9

COLLECTIVE PEAKS VS COLL.STEADY BY CYCLIC STEADY 40

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40					2	4					6
-30					11	9	2	1			23
-20			1	10	65	34	3				113
-10			2	33	65	34	1				135
10			3	15	11	8	1				38
20				1	1						2
30					1						1
40											
TOTAL			6	59	156	89	7	1			318
TIME	0.	2.3	5.9	226.2	1073.4	797.0	118.0	2.2	0.	0.	2224.9

TABLE XIV, contd.

COLLECTIVE PEAKS VS COLL.STEADY BY CYCLIC STEADY 50

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40					3	1					4
-30					4	7	1				12
-20				7	24	18	2				51
-10				18	32	15	3				68
10				2	10	4					16
20				1	1						2
30											
40											
TOTAL				28	74	45	6				153
TIME	0.	0.	1.4	44.6	214.9	149.7	22.9	0.4	0.	0.	433.8

COLLECTIVE PEAKS VS COLL.STEADY BY CYCLIC STEADY 60

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40											
-30											
-20					2	9	5	1			17
-10					1	9	5				15
10						1	1				4
20											
30											
40											
TOTAL					3	21	11	1			36
TIME	0.	0.	0.	0.	8.9	43.4	42.0	5.0	0.1	0.	0.	96.4

COLLECTIVE PEAKS VS COLL.STEADY BY CYCLIC STEADY 70

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40											
-30											
-20											
-10					?						2
10											
20											
30											
40											
TOTAL											2
TIME	0.	0.	0.	0.	0.2	1.9	0.2	0.	0.	0.	0.	2.4

TABLE XV

COLLECTIVE PEAKS VS COLL. STEADY BY ALTITUDE LESS

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS						5					5
-40					3	1					4
-30					9	13		1			23
-20			1	9	51	55	3				119
-10				21	49	39	2				111
10				10	15	13					38
20					1						1
30											
40											
TOTAL			1	40	128	126	5	1			301
TIME	0.	1.2	6.5	220.8	1156.9	814.5	197.6	19.1	0.1	0.	2419.6

COLLECTIVE PEAKS VS COLL. STEADY BY ALTITUDE 1000

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS							1				1
-40					3	6	1				10
-30					6	11	4	1			22
-20				11	63	43	8				125
-10			2	32	76	56	13				179
10			3	8	18	7	1				37
20				2	1						3
30											
40											
TOTAL			5	53	167	123	28	1			377
TIME	0.	0.7	3.2	107.7	944.1	1239.4	534.5	36.1	0.	0.	2855.7

COLLECTIVE PEAKS VS COLL. STEADY BY ALTITUDE 2000

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40						5		2			7
-30					4	5	9	1			19
-20				2	25	42	23	1			91
-10				10	59	98	37	2			205
10					12	25	2				39
20					1	1					2
30					1						1
40											
TOTAL					13	99	176	71	6		364
TIME	0.	0.4	0.5	126.5	1483.3	1790.4	688.3	66.5	0.	0.	4156.6

COLLECTIVE PEAKS VS COLL. STEADY BY ALTITUDE 5000

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS							1				1
-40											
-30											
-20						1	1				2
-10						2		1			3
10											
20											
30											
40											
TOTAL						3	2	1			6
TIME	0.	0.	0.	0.	0.4	90.7	203.3	201.6	15.1	0.	0.	371.0

TABLE XVI

COLLECTIVE PEAKS VS COLL. STEADY BY VELOCITY LESS

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS						1					1
-40					1	1					2
-30					5	7	1				13
-20				5	27	25	3				60
-10				12	40	29	4				85
10				2	13	6					21
20				1	1						2
30											
40											
TOTAL				20	87	69	8				184
TIME	0.	0.	1.0	42.0	265.5	169.2	32.8	0.2	0.	0.	510.7

COLLECTIVE PEAKS VS COLL. STEADY BY VELOC 65

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS						2	1				3
-40						3					3
-30					2	2	1				5
-20				2	14	12					28
-10				13	22	9	2				46
10				1	8	2					11
20											
30											
40											
TOTAL				16	46	30	4				96
TIME	0.	0.	0.5	48.7	304.0	147.6	21.8	1.0	0.	0.	523.5

COLLECTIVE PEAKS VS COLL. STEADY BY VELOCITY 40

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS						1					1
-40					2	4	1				7
-30					2	5					7
-20				5	22	2					29
-10			2	12	6						20
10			2	8	2						12
20											
30											
40											
TOTAL			4	25	34	12	1				76
TIME	0.	0.4	2.0	46.0	89.0	36.6	5.7	0.2	0.	0.	178.8

COLLECTIVE PEAKS VS COLL. STEADY BY VELOCITY 70

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS					1						1
-40					4	4	2	1			11
-30			1	1	15	15	6				38
-20				7	33	23	2				65
-10				1	8	3					12
10				1							1
20											
30											
40											
TOTAL			1	10	61	45	10	1			128
TIME	0.	0.	0.7	98.2	587.1	340.4	44.3	4.5	0.	0.	1065.2

COLLECTIVE PEAKS VS COLL. STEADY BY VELOCITY 60

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS					1						1
-40					1	6	1				8
-30				4	14	6					24
-20				7	10	1					18
-10			1	3	3						7
10											
20											
30											
40											
TOTAL			1	14	29	13	1				58
TIME	0.	1.8	0.6	52.0	113.8	67.0	8.4	1.3	0.	0.	244.8

COLLECTIVE PEAKS VS COLL. STEADY BY VELOCITY 75

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS						1					1
-40						1					1
-30					3	2	3				8
-20				3	20	29	5				57
-10				9	35	41	12	1			98
10				2	4	9					15
20					1						1
30											
40											
TOTAL				14	63	83	20	1			181
TIME	0.	0.1	2.7	119.6	1074.5	799.1	180.9	19.7	0.	0.	2186.6

TABLE XVI, contd.

COLLECTIVE PEAKS VS COLL. STEADY BY VELOCITY 80

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS							1				1
-40					1	3					4
-30						2	3				6
-20				2	20	29	6	1			58
-10				3	24	52	10	1			90
10				1	5	7	2				15
20						1					1
30											
40											
TOTAL				6	50	95	22	2			175
TIME	0.	0.	1.7	48.0	400.3	1054.4	412.4	32.0	0.	0.	2349.8

COLLECTIVE PEAKS VS COLL. STEADY BY VELOCITY 85

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40								1			1
-30					1		2	1			4
-20				1	4	16	6				27
-10					9	25	6	1			42
10					1	4	1				6
20											
30					1						1
40											
TOTAL				1	15	45	17	3			81
TIME	0.	0.	0.	8.6	306.4	868.8	476.3	23.6	0.	0.	1683.8

COLLECTIVE PEAKS VS COLL. STEADY BY VELOCITY 90

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS								1			1
-40								1			2
-30					1						9
-20						6	3				28
-10					4	13	11				9
10					1	7					
20											
30											
40											
TOTAL					6	26	14	2			48
TIME	0.	0.	0.	1.2	89.8	355.8	264.0	24.4	0.	0.	739.1

COLLECTIVE PEAKS VS COLL. STEADY BY VELOCITY 95

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40											
-30											
-20						1	4				5
-10					1	2	1				4
10						5					5
20					1						1
30											
40											
TOTAL					2	8	5				15
TIME	0.	0.	0.	0.	1.0	9.4	92.1	120.5	17.1	0.	0.	240.1

COLLECTIVE PEAKS VS COLL. STEADY BY VELOCITY 100

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40											
-30											
-20							1				1
-10							2				2
10						2					2
20											
30											
40											
TOTAL						2	3				5
TIME	0.	0.	0.	0.	1.6	9.1	32.6	7.9	0.1	0.	51.3

COLLECTIVE PEAKS VS COLL. STEADY BY VELOCITY 105

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40											
-30											
-20							1				1
-10											
10											
20											
30											
40											
TOTAL							1				1
TIME	0.	0.	0.	0.	0.7	3.1	11.6	3.3	0.	0.	18.2

TABLE XVII

COLLECTIVE PEAKS VS COLL. STEADY BY RPM LESS

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40											
-30											
-20											
-10											
10					1	1					2
20											
30											
40											
TOTAL					1	1					2
TIME	0.	0.	0.	0.3	7.8	2.0	0.8	0.	0.	0.	5.9

COLLECTIVE PEAKS VS COLL. STEADY BY RPM 320

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS											
-40					2	5		1			8
-30					11	12	7				30
-20				8	39	48	13				108
-10			2	31	71	64	28				196
10			3	9	16	12	1				41
20					2						2
30											
40											
TOTAL			5	48	141	141	49	1			385
TIME	0.	0.	2.8	118.1	1030.9	1763.9	226.5	14.8	0.	0.	2767.0

COLLECTIVE PEAKS VS COLL. STEADY BY RPM 300

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS						2					2
-40						1					1
-30					1	1					2
-20				1	9	7	1				18
-10				1	7	5	3				16
10				2	2	2					6
20				1							1
30											
40											
TOTAL				5	19	18	4				46
TIME	0.	0.	0.3	22.5	124.6	218.2	305.3	25.5	0.1	0.	696.5

COLLECTIVE PEAKS VS COLL. STEADY BY RPM 330

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS					1						1
-40											
-30				1	3	2					6
-20				1	5	1					7
-10											
10											
20											
30											
40											
TOTAL				2	9	3					14
TIME	0.	0.	0.2	2.4	21.4	19.2	0.3	0.	0.	0.	43.4

COLLECTIVE PEAKS VS COLL. STEADY BY RPM 310

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS						3	2				5
-40					3	6	1	1			11
-30					7	16	6	3			32
-20			1	13	85	84	21	1			205
-10				30	100	125	21	3			279
10				7	26	30	2				65
20				1	1	1					3
30					1						1
40											
TOTAL			1	51	223	265	53	8			601
TIME	0.	2.3	7.0	312.0	2410.8	2452.4	1029.2	96.5	0.	0.	6290.2

COLLECTIVE PEAKS VS COLL. STEADY BY RPM TOTAL

	LESS	10	20	30	40	50	60	70	80	90	TOTAL
LESS						5	2				7
-40					5	12	1	2			21
-30					19	29	13	3			64
-20			1	23	136	141	35	1			337
-10			2	63	183	195	52	3			498
10			3	18	45	45	3				114
20				2	3	1					6
30					1						1
40											
TOTAL			6	106	393	428	106	9			1048
TIME	0.	2.3	10.2	455.4	3640.4	3935.6	1622.0	136.8	0.1	0.	9802.9

TABLE XVIII

COLLECTIVE PEAKS VS ACCELERATION BY MISS. SEG. ASCENT

	LESS	-15.0	-12.0	-9.0	-6.0	-3.0	3.0	6.0	9.0	12.0	15.0	TOTAL
LESS						1						1
-40						5						5
-30					1	17						18
-20					1	55	1					57
-10					1	167	3					171
10					1	111	4					116
20						15	3					18
30						6						6
40												
TOTAL					4	377	11					392

COLLECTIVE PEAKS VS ACCELERATION BY MISS. SEG. MANUVR

	LESS	-15.0	-12.0	-9.0	-6.0	-3.0	3.0	6.0	9.0	12.0	15.0	TOTAL
LESS				2	3	15						20
-40					11	47						58
-30				1	18	211		1				231
-20					24	480	5					509
-10				4	20	632	14		1			671
10					4	320	23	2				349
20				1	6	93	9	1				110
30						8	1					9
40												
TOTAL				8	86	1306	52	4	1			1957

COLLECTIVE PEAKS VS ACCELERATION BY MISS. SEG. DESCNT

	LESS	-15.0	-12.0	-9.0	-6.0	-3.0	3.0	6.0	9.0	12.0	15.0	TOTAL
LESS				6	19	115						138
-40				1	31	238						270
-30				1	17	330						348
-20				1	8	233						242
-10					3	191	1					195
10					1	95						96
20						9						9
30												
40												
TOTAL				7	79	1211	1					1298

TABLE XIX

COLLECTIVE PEAKS VS VELOCITY BY MISSION SEGMENT ASCENT

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
LESS	1															1
-40	3			2												5
-30	9	2	3	2		2										18
-20	29	12	5	5	1	3										57
-10	96	22	12	10	11	8	9	3								171
10	79	10	7	5	2	5	2	5	1	1						116
20	11	1	2	1	1			1			1					18
30	2	1	1	1			1									6
40																
TOTAL	229	58	30	26	17	18	12	9	1	1	1					392

COLLECTIVE PEAKS VS VELOCITY BY MISSION SEGMENT MANUVR

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
LESS	2	6	1	5	3	2		1								20
-40	6	21	9	13	3	3		1								58
-30	27	53	34	48	29	20	10	6	3		1					231
-20	23	29	69	114	95	67	34	13	6							509
-10	36	66	62	103	122	112	92	43	24	7	2					671
10	16	28	23	37	56	45	60	43	26	7	2	5	1			349
20		7	4	5	12	23	17	14	19	4	1	3	1			110
30					1	1		3	3	1						9
40																
TOTAL	113	270	202	325	321	273	213	124	81	19	6	8	2			1957

COLLECTIVE PEAKS VS VELOCITY BY MISSION SEGMENT DESCNT

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
LESS	12	62	15	8	20	16	4		1							138
-40	45	142	27	21	20	10	4	1								270
-30	100	43	26	18	23	20	13	5								348
-20	94	39	20	24	26	21	11	6	1							242
-10	117	12	5	12	10	15	14	4	3	3						195
10	81	1		3	1	5	3	1			1					96
20	7				1				1							9
30																
40																
TOTAL	456	399	93	86	101	87	49	17	6	3	1					1298

TABLE XX

COLLECTIVE PEAKS VS RPM BY MISSION SEGMENT ASCENT

	LESS	[illegible]	310	320	330	340	TOTAL
LESS				1			1
-40							
-30		3	10				13
-20			36	1			37
-10		21	144	3			173
10	1	13	72	10			136
20		4	30	9			43
30			5				5
40							
TOTAL		38	97	24			397

COLLECTIVE PEAKS VS RPM BY MISSION SEGMENT MANEUVR

	LESS	300	310	320	330	340	TOTAL
LESS		2	12	2	2		20
-40		1	74	37	2		114
-30		10	102	113			231
-20		25	334	244	9		612
-10		70	332	298	1		671
10		7	224	96			327
20		31	68	11			110
30			4				9
40							
TOTAL		146	1600	705	14		2557

COLLECTIVE PEAKS VS RPM BY MISSION SEGMENT DESCNT

	LESS	[illegible]	310	320	330	340	TOTAL
LESS		4	65	26	0		139
-40		1	130	125	12		270
-30		11	464	163	9		648
-20		13	257	64	5		542
-10		24	108	69	3		76
10		20	57	19			96
20		6	4				9
30							
40							
TOTAL		79	665	516	29		1298

TABLE XXI

NZ GUST PEAKS VS VEL. BY MISS. SEG. STEADY, ALT. LESS, WGT. 5000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3																
1.2				1	2	2	1		1							7
0.8																
0.7								2	1							3
0.6																
0.5																
0.4																
0.2																
LESS																
TOTAL				1	2	2	1	2	2							10
TIME	11.1	0.2	0.2	1.4	3.1	6.8	6.4	5.6	5.5	1.8	1.4	0.9	0.	0.	0.	44.5

NZ GUST PEAKS VS VEL. BY MISS. SEG. STEADY, ALT. 1000, WGT. 5000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3																
1.2							1	4		1						6
0.8																
0.7							1	7		1						9
0.6																
0.5																
0.4																
0.2																
LESS																
TOTAL							2	11		2						15
TIME	4.7	0.	0.2	1.4	1.6	3.1	6.3	17.4	19.9	5.7	0.0	0.	0.	0.	0.	60.4

NZ GUST PEAKS VS VEL. BY MISS. SEG. STEADY, ALT. 2000, WGT. 5000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3																
1.2																
0.8																
0.7							1		1							2
0.6																
0.5																
0.4																
0.2																
LESS																
TOTAL							1		1							2
TIME	0.	0..	0.8	2.1	7.1	9.7	7.4	7.3	0.7	0.1	0.	0.	0.	0.	0.	35.2

TABLE XXI, contd.

NZ GUST PEAKS VS VEL. BY MISS. SEG. DESCNT, ALT. LESS, WGT. 6000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3		1	1			1					1					4
1.2		8	6	5	7	7	6		1							40
0.8																
0.7		1	3	2	3	7	3			1	1					21
0.6								1			1					2
0.5																
0.4																
0.2																
LESS																
TOTAL		10	10	7	10	15	9	1		1	3					67

NZ GUST PEAKS VS VEL. BY MISS. SEG. DESCNT, ALT. 1000, WGT. 6000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3																
1.2		9	2	3	3	5	3	1								26
0.8																
0.7		4	1	2	3	2	1	1		2						16
0.6																
0.5																
0.4																
0.2																
LESS																
TOTAL		13	3	5	6	7	4	2		2						42

NZ GUST PEAKS VS VEL. BY MISS. SEG. DESCNT, ALT. 2000, WGT. 6000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3																
1.2		3	4	4	4	3	1									19
0.8																
0.7		1	1	1	5	2	1									13
0.6					1											1
0.5																
0.4																
0.2																
LESS																
TOTAL		4	5	5	10	5	2	2								33

NZ GUST PEAKS VS VEL. BY MISS. SEG. ASCENT, ALT. LESS, WGT. 6000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3																
1.2		3	1	3	1	1	1	1								11
0.8																
0.7		1	2		2											5
0.6		1														1
0.5																
0.4																
0.2																
LESS																
TOTAL		5	3	3	3	1	1	1								17

TABLE XXI, contd.

NZ GUST PEAKS VS VEL. BY MISS. SEG. ASCENT, ALT. 1000, WGT. 6000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3																
1.2		3	1	1	3	3	2			1						14
0.8																
0.7		1		1	1	2										5
0.6		1														1
0.5																
0.4																
0.2																
LESS																
TOTAL		5	1	2	4	5	2			1						20

NZ GUST PEAKS VS VEL. BY MISS. SEG. ASCENT, ALT. 2000, WGT. 6000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3					1											1
1.2		2	2	5	1	2		1								13
0.8																
0.7		2	1		2	2	1									8
0.6																
0.5																
0.4																
0.2																
LESS																
TOTAL		4	3	5	4	4	1	1								22

NZ GUST PEAKS VS VEL. BY MISS. SEG. MANUVR, ALT. LESS, WGT. 6000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5								1								1
1.4						1		1								2
1.3				1	1	1	2		1	2	1	3				12
1.2		4	8	18	21	20	20	19	14	5	3	3	1			136
0.8																
0.7		3	6	7	9	13	20	10	7	5	2		1			83
0.6				1				3	2			2				8
0.5																
0.4																
0.2																
LESS																
OTAL		7	14	27	31	35	42	34	24	12	6	8	2			242

NZ GUST PEAKS VS VEL. BY MISS. SEG. MANUVR, ALT. 1000, WGT. 6000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3		2	2	1	4		2									11
1.2		9	12	16	45	36	21	21	5	2	1					168
0.8																
0.7		6	14	7	31	26	16	16	6	1						123
0.6					1		1									2
0.5																
0.4																
0.2																
LESS																
TOTAL		17	28	24	81	62	40	37	11	3	1					304

TABLE XXI, contd.

NZ GUST PEAKS VS VEL. BY MISS. SEG. MANUVR, ALT. 2000, WGT. 6000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3		2	3	2	3	4	1									15
1.2		19	13	24	26	16	9	4	2		1					114
0.8																
0.7		14	7	14	20	9	10	2	2							78
0.6		1		1												2
0.5																
0.4																
0.2																
LESS																
TOTAL		36	23	41	49	29	20	6	4		1					209

NZ GUST PEAKS VS VEL. BY MISS. SEG. STEADY, ALT. LESS, WGT. 6000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4								2								2
1.3			1	2	2	3	1	4	2	3	1		1			20
1.2		7	11	21	37	59	67	55	41	38	13	7	3	2		361
0.8																
0.7		13	4	24	41	48	63	46	33	18	20	3	2			315
0.6			1	2	4	3		6	7	2	1	1				27
0.5			1		1			2								4
0.4																
0.2																
LESS																
TOTAL		20	18	49	85	113	131	115	83	61	35	11	6	2		729
TIME	175.2	38.5	47.5	78.4	185.3	479.6	410.2	165.1	80.8	46.7	14.1	6.4	5.8	0.8	0.	1734.3

NZ GUST PEAKS VS VEL. BY MISS. SEG. STEADY, ALT. 1000, WGT. 6000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3					1	4	1	3	2							11
1.2			1	10	22	60	68	72	26	10	4					273
0.8																
0.7		1	2	10	32	47	74	47	22	6	2	1				244
0.6					1	4	2	2	1							10
0.5																
0.4																
0.2																
LESS																
TOTAL		1	3	20	56	115	145	124	51	16	6	1				538
TIME	74.9	30.5	35.9	76.5	161.3	423.0	513.8	349.7	122.1	36.8	9.7	1.7	0.4	0.	0.	1836.2

NZ GUST PEAKS VS VEL. BY MISS. SEG. STEADY, ALT. 2000, WGT. 6000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4							1									1
1.3				4	4	6	2	3		1						20
1.2		3	8	34	41	69	46	35	25	10	9	1				281
0.8																
0.7		2	8	26	40	64	58	42	24	17	7	1				289
0.6				3	3	3	2			2	1					14
0.5																
0.4																
0.2																
LESS																
TOTAL		5	16	67	88	142	109	80	49	30	17	2				605
TIME	28.8	33.7	69.4	184.2	381.8	687.5	668.3	527.3	240.8	78.0	16.2	6.0	1.1	0.	0.	2923.0

TABLE XXI, contd.

NZ GUST PEAKS VS VEL. BY MISS. SEG. STEADY, ALT. 5000, WGT. 7000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3						1										1
1.2					2	5		2								9
0.8																
0.7				1	2	3		3	2							11
0.6																
0.5																
0.4																
0.2																
LESS																
TOTAL				1	4	9		5	2							21
TIME	0.	0.5	0.5	1.9	15.4	74.3	133.0	109.5	29.6	1.6	0.	0.	0.	0.	0.	366.3

NZ GUST PEAKS VS VEL. BY MISS. SEG. ASCENT, ALT. LESS, WGT. 7000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3								1		1						2
1.2		5	1	1	3	3		1	1							15
0.8																
0.7			1		3	3	1	3								11
0.6										1						1
0.5																
0.4																
0.2																
LESS																
TOTAL		5	2	1	6	6	1	5	1	2						29

NZ GUST PEAKS VS VEL. BY MISS. SEG. ASCENT, ALT. 1000, WGT. 7000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3		1	2				2	4	1							10
1.2		8	1	8		1	5	10	10	7						50
0.8																
0.7		3	2	3	2	1	2	6	4							23
0.6								3	2							5
0.5																
0.4																
0.2																
LESS																
TOTAL		12	5	11	2	2	9	23	17	7						88

NZ GUST PEAKS VS VEL. BY MISS. SEG. ASCENT, ALT. 2000, WGT. 7000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3																
1.2		4		1	3	1	1									10
0.8																
0.7			1				1									2
0.6																
0.5																
0.4																
0.2																
LESS																
TOTAL		4	1	1	3	1	2									12

TABLE XXI, contd.

NZ GUST PEAKS VS VEL. BY MISS. SEG. MANUVR, ALT. LESS, WGT. 7000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4								1								1
1.3					3	6	1	2	1	2	1					16
1.2		1	2	6	11	17	12	32	5	3	4					93
0.8																
0.7		1	2	4	5	7	3	14	6							42
0.6						2	3	3	1							9
0.5																
0.4																
0.2																
LESS TOTAL		2	4	10	19	32	19	52	13	5	5					161

NZ GUST PEAKS VS VEL. BY MISS. SEG. MANUVR, ALT. 1000, WGT. 7000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3		1	2	1	2	5	1	3	5	1						21
1.2		9	4	22	21	41	32	29	14	5	1					178
0.8																
0.7		4	9	15	16	22	20	13	8	6	1					116
0.6				4	3	3	3	2	1							16
0.5									1							1
0.4																
0.2																
LESS TOTAL		14	15	42	42	71	56	47	29	12	2					330

NZ GUST PEAKS VS VEL. BY MISS. SEG. MANUVR, ALT. 2000, WGT. 7000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3																
1.2		2	1	3	4	3		5	1	1						20
0.8																
0.7		1	1	3	1	6	2	2		1						17
0.6								1								1
0.5																
0.4																
0.2																
LESS TOTAL		3	2	6	5	9	2	8	1	2						38

NZ GUST PEAKS VS VEL. BY MISS. SEG. STEADY, ALT. LESS, WGT. 7000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3				1	3	1	4	3	8	2	1	1				24
1.2		2	1	9	10	29	50	51	28	23	9	2				214
0.8																
0.7			3	4	11	24	54	34	16	6	5	1				158
0.6				1	1	3	2	4	4	4	3					22
0.5																
0.4																
0.2																
LESS TOTAL		2	4	15	25	57	110	92	56	35	18	4				418
TIME	85.3	14.4	12.6	14.4	37.0	105.6	173.4	99.9	52.4	34.7	6.1	2.5	1.8	1.0	0.	640.9

TABLE XXI, contd.

NZ GUST PEAKS VS VEL. BY MISS. SEG. STEADY, ALT. 1000, WGT. 7000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4				1	2			1								4
1.3			1		2	1	3	4	1	2						14
1.2			2	11	30	33	38	41	22	4						181
0.8																
0.7		1	1	8	29	26	42	54	15	4	3					183
0.6							1	1	1	3						6
0.5									1	1						2
0.4																
0.2																
LESS																
TOTAL		1	4	20	63	60	84	101	40	14	3					390
TIME	106.1	35.6	3+.8	58.7	104.3	128.5	198.4	202.6	67.3	12.3	0.8	0.5	0.	0.	0.	949.6

NZ GUST PEAKS VS VEL. BY MISS. SEG. STEADY, ALT. 2000, WGT. 7000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3				1	1	1										3
1.2		4	7	22	24	21	17	18	16	5						134
0.8																
0.7		3	7	14	22	24	15	26	19	7	1					138
0.6				2	1	1	2									6
0.5																
0.4																
0.2																
LESS																
TOTAL		7	14	39	48	47	34	44	35	12	1					281
TIME	24.7	25.4	43.0	104.6	164.5	266.5	229.3	197.0	117.5	22.5	3.0	0.3	0.1	0.	0.	1198.4

NZ GUST PEAKS VS VEL. BY MISS. SEG. DESCNT, ALT. LESS, WGT. 7000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3					1		1									2
1.2		1		8	5	3	4	2								23
0.8																
0.7			1			2	2		1							6
0.6																
0.5																
0.4																
0.2																
LESS																
TOTAL		1	1	8	6	5	7	2	1							31

NZ GUST PEAKS VS VEL. BY MISS. SEG. DESCNT, ALT. 1000, WGT. 7000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3								2		1						3
1.2		2			5	1	7	7	1		1					24
0.8																
0.7		1		2	2	6	3									14
0.6								1	1							2
0.5																
0.4																
0.2																
LESS																
TOTAL		3		2	7	7	10	10	2	1	1					43

TABLE XXI, contd.

NZ GUST PEAKS VS VEL. BY MISS. SEG. DESCNT, ALT. 2000, WGT. 7000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3																
1.2		4		1	2	3										10
0.8																
0.7		1	2			2		1								6
0.6																
0.5																
0.4																
0.2																
LESS																
TOTAL		5	2	1	2	5		1								16

NZ GUST PEAKS VS VEL. BY MISS. SEG. ASCENT, ALT. 1000, WGT. 8000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3																
1.2			1													1
0.8																
0.7																
0.6																
0.5																
0.4																
0.2																
LESS																
TOTAL			1													1

NZ GUST PEAKS VS VEL. BY MISS. SEG. MANUVR, ALT. 1000, WGT. 8000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3				1	1			1								3
1.2				4	1	2	3	1								11
0.8																
0.7				1	1	3		2								7
0.6						1										1
0.5																
0.4																
0.2																
LESS																
TOTAL				6	3	6	3	4								22

NZ GUST PEAKS VS VEL. BY MISS. SEG. STEADY, ALT. 1000, WGT. 8000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3																
1.2						2		2	1							5
0.8																
0.7						1										1
0.6																
0.5																
0.4																
0.2																
LESS																
TOTAL						3		2	1							6
TIME	0.	0.	0.	0.	1.1	1.3	2.1	2.4	2.5	0.	0.	0.	0.	0.	0.	9.5

TABLE XXII

NZ GUST PEAKS VS MU BY MISS. SEG. ASCENT, ALT. LESS, CT/S 0.06

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7									
1.6									
1.5									
1.4									
1.3					1	1			2
1.2				10	14	2			26
0.8									
0.7			1	2	12	1			16
0.6				1		1			2
0.5									
0.4									
0.2									
LESS									
TOTAL			1	13	27	5			46

NZ GUST PEAKS VS MU BY MISS. SEG. ASCENT, ALT. 1000, CT/S 0.06

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7									
1.6									
1.5									
1.4									
1.3				3	3	4			10
1.2			1	13	25	26			65
0.8									
0.7			1	5	13	9			28
0.6				1		5			6
0.5									
0.4									
0.2									
LESS									
TOTAL			2	22	41	44			109

NZ GUST PEAKS VS MU BY MISS. SEG. ASCENT, ALT. 2000, CT/S 0.06

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7									
1.6									
1.5									
1.4									
1.3					1				1
1.2				8	15				23
0.8									
0.7				4	6				10
0.6									
0.5									
0.4									
0.2									
LESS									
TOTAL				12	22				34

NZ GUST PEAKS VS MU BY MISS. SEG. MANUVR, ALT. LESS, CT/S 0.06

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7									
1.6									
1.5						1			1
1.4					1	2			3
1.3					15	10	3		28
1.2				15	150	60	4		229
0.8									
0.7				11	78	35	1		125
0.6					8	7	2		17
0.5									
0.4									
0.2									
LESS									
TOTAL				26	252	115	10		403

NZ GUST PEAKS VS MU BY MISS. SEG. MANUVR, ALT. 1000, CT/S 0.06

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7									
1.6									
1.5									
1.4									
1.3				9	18	9			35
1.2			2	39	263	53			357
0.8									
0.7				32	172	40			244
0.6				2	16	1			19
0.5						1			1
0.4									
0.2									
LESS									
TOTAL			2	81	469	104			656

NZ GUST PEAKS VS MU BY MISS. SEG. MANUVR, ALT. 2000, CT/S 0.06

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7									
1.6									
1.5									
1.4									
1.3				6	9				15
1.2			1	34	85	14			134
0.8									
0.7				27	62	6			95
0.6				1	1	1			3
0.5									
0.4									
0.2									
LESS									
TOTAL			1	68	157	21			247

TABLE XXII, contd.

NZ GUST PEAKS VS MU BY MISS. SEG. DESCNT, ALT. LESS, CT/S 0.06

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7									
1.6									
1.5									
1.4									
1.3				2	3	1			6
1.2			1	13	47	2			63
0.8									
0.7				4	20	3			27
0.6						2			2
0.5									
0.4									
0.2									
LESS									
TOTAL			1	19	70	8			98

NZ GUST PEAKS VS MU BY MISS. SEG. DESCNT, ALT. 1000, CT/S 0.06

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7									
1.6									
1.5									
1.4									
1.3					2	1			3
1.2			1	13	31	5			50
0.8									
0.7			1	5	21	3			30
0.6						2			2
0.5									
0.4									
0.2									
LESS									
TOTAL			2	18	54	11			85

NZ GUST PEAKS VS MU BY MISS. SEG. DESCNT, ALT. 2000, CT/S 0.06

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7									
1.6									
1.5									
1.4									
1.3									
1.2			1	11	17				29
0.8									
0.7				6	11	2			19
0.6					1				1
0.5									
0.4									
0.2									
LESS									
TOTAL			1	17	29	2			49

NZ GUST PEAKS VS MU BY MISS. SEG. STEADY, ALT. LESS, CT/S LESS

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7									
1.6									
1.5									
1.4									
1.3									
1.2					5				5
0.8									
0.7									
0.6									
0.5									
0.4									
0.2									
LESS									
TOTAL					5				5
TIME	0.	5.7	0.9	0.2	11.2	0.	0.	0.	18.0

NZ GUST PEAKS VS MU BY MISS. SEG. STEADY, ALT. LESS, CT/S 0.06

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7									
1.6									
1.5						2			2
1.4									
1.3					21	22	1		44
1.2				22	316	231	8		577
0.8									
0.7			1	18	294	158	5		476
0.6					21	28			49
0.5				1	1	2			4
0.4									
0.2									
LESS									
TOTAL			1	41	653	443	14		1152
TIME	0.6	232.7	32.7	108.2	1600.2	414.1	13.0	0.	2401.5

NZ GUST PEAKS VS MU BY MISS. SEG. STEADY, ALT. 1000, CT/S 0.06

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7									
1.6									
1.5									
1.4					3	1			4
1.3				1	14	10			25
1.2				9	299	157			465
0.8									
0.7				10	285	142			437
0.6					8	8			16
0.5						2			2
0.4									
0.2									
LESS									
TOTAL				20	609	320			949
TIME	0.5	167.7	21.0	135.4	1869.5	658.9	1.4	0.	2854.6

TABLE XXII, contd.

NZ GUST PEAKS VS MU BY MISS. SEG. STEADY, ALT. 2000, CT/S 0.06

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7									
1.6									
1.5									
1.4					1				1
1.3				2	18	3			23
1.2			1	24	293	96	1		415
0.9									
0.7			1	21	292	115			429
0.6				2	14	3			20
0.5									
0.4									
0.2									
LESS									
TOTAL			2	50	618	217	1		884
TIME	0.1	45.3	8.8	179.5	2970.3	949.4	2.8	0.	4156.7

NZ GUST PEAKS VS MU BY MISS. SEG. STEADY, ALT. 5000, CT/S 0.06

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7									
1.6									
1.5									
1.4									
1.3					1				1
1.2					7	2			9
0.8									
0.7					6	5			11
0.6									
0.5									
0.4									
0.2									
LESS									
TOTAL					14	7			21
TIME	0.	0.	0.	1.0	227.3	118.2	0.	0.	346.5

TABLE XXIII

NZ GUST PEAKS VS MU COMPOSITE

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7									
1.6									
1.5						1			1
1.4					5	5			10
1.3				22	106	61	4		193
1.2			8	211	1567	648	13		2447
0.8									
0.7			5	145	1272	519	6		1947
0.6				8	69	58	2		137
0.5				1	1	5			7
0.4									
0.2									
LESS									
TOTAL			13	387	3020	1297	25		4742

TABLE XXIV

NZ GUST PEAKS VS MU BY MISS. SEG. ASCENT

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7									
1.6									
1.5									
1.4									
1.3				3	5	5			13
1.2			1	31	54	28			114
0.8									
0.7			2	11	31	10			54
0.6				2		6			8
0.5									
0.4									
0.2									
LESS									
TOTAL			3	47	90	49			189

NZ GUST PEAKS VS MU BY MISS. SEG. MANUVR

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7									
1.6									
1.5						1			1
1.4					1	2			3
1.3				14	42	19	3		78
1.2			3	88	498	127	4		720
0.8									
0.7				70	312	81	1		464
0.6				3	25	9	2		39
0.5						1			1
0.4									
0.2									
LESS									
TOTAL			3	175	878	240	10		1306

NZ GUST PEAKS VS MU BY MISS. SEG. DESCNT

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7									
1.6									
1.5									
1.4									
1.3				2	5	2			9
1.2			3	37	95	7			142
0.9									
0.7			1	15	52	8			76
0.6					1	4			5
0.5									
0.4									
0.2									
LESS									
TOTAL			4	54	153	21			232

TABLE XXIV, contd.

NZ GUST PEAKS VS MU BY MISS. SEG. STEADY

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7									
1.6									
1.5									
1.4					4	3			7
1.3				3	54	35	1		93
1.2			1	53	920	486	9		1471
0.8									
0.7			2	49	877	420	5		1353
0.6				3	43	39			85
0.5				1	1	4			6
0.4									
0.2									
LESS									
TOTAL			3	111	1899	987	15		3015
TIME	1.2	452.3	63.5	424.3	6696.5	2147.7	17.3	0.	9802.9

TABLE XXV

NZ GUST PEAKS VS VEL. BY MISS. SEG. ASCENT

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3		1	2		1		2	5	1	1						13
1.2		25	7	19	11	11	9	13	11	8						114
0.8																
0.7		7	7	4	10	8	5	9	4							54
0.6		2						3	2	1						8
0.5																
0.4																
0.2																
LESS																
TOTAL		35	16	23	22	19	16	30	19	10						189

NZ GUST PEAKS VS VEL. BY MISS. SEG. MANUVR

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5								1								1
1.4						1		2								3
1.3		5	7	6	14	16	7	6	7	5	2	3				78
1.2		44	40	93	129	135	97	111	41	16	10	3	1			720
0.8																
0.7		29	39	51	83	86	71	59	29	13	3		1			464
0.6		1		6	4	6	7	9	4			2				39
0.5									1							1
0.4																
0.2																
LESS																
TOTAL		79	86	156	230	244	182	188	82	34	15	8	2			1306

NZ GUST PEAKS VS VEL. BY MISS. SEG. DESCNT

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3		1	1		1	1	1	2		1	1					9
1.2		27	12	21	26	22	21	10	2		1					142
0.8																
0.7		8	8	7	13	21	10	4	1	3	1					76
0.6					1			2			1					5
0.5																
0.4																
0.2																
LESS																
TOTAL		36	21	28	41	44	32	18	4	4	4					232

TABLE XXV. contd.

NZ GUST PEAKS VS VEL. BY MISS. SEG. STEADY

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4				1	2		1	3								7
1.3			2	8	13	17	11	17	13	8	2	1	1			93
1.2		16	30	108	168	280	288	280	160	91	35	10	3	2		1471
0.8																
0.7		20	25	87	177	237	308	261	133	59	38	6	2			1353
0.6			1	8	10	14	9	13	13	11	5	1				85
0.5			1		1			2	1	1						6
0.4																
0.2																
LESS																
TOTAL		36	59	212	371	548	617	576	320	170	80	18	6	2		3015
TIME	510.7	178.8	244.8	523.5	1065.2	2186.6	2349.8	1683.8	739.1	240.1	51.3	18.2	9.2	1.8	0.	9802.9

TABLE XXVI

NZ GUST PEAKS VS VELOCITY COMPOSITE

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5								1								1
1.4				1	2	1	1	5								10
1.3		7	12	14	29	34	21	30	21	15	5	4	1			193
1.2		112	89	241	334	448	415	414	214	115	46	13	4	2		2447
0.8																
0.7		64	79	149	283	352	394	333	167	75	42	6	3			1947
0.6		3	1	14	15	20	16	27	20	12	6	3				137
0.5			1		1			2	2	1						7
0.4																
0.2																
LESS																
TOTAL		186	182	419	664	855	847	812	424	218	99	26	8	2		4742

TABLE XXVII

NZ MANEUVERS VS VEL. BY MISS. SEG. ASCENT. ALT. LESS. WGT. 5000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3																
1.2	1															1
0.8																
0.7																
0.6																
0.5																
0.4																
0.2																
LESS																
TOTAL	1															1

NZ MANEUVERS VS VEL. BY MISS. SEG. MANUVR. ALT. 1000. WGT. 5000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3						1										1
1.2			1													1
0.8																
0.7																
0.6																
0.5																
0.4																
0.2																
LESS																
TOTAL			1			1										2

TABLE XXVII, contd.

NZ MANEUVERS VS VEL. BY MISS. SEG. MANUVR, ALT. 2000, WGT. 5000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3																
1.2					1		1									2
0.8																
0.7																
0.6																
0.5																
0.4																
0.2																
LESS																
TOTAL					1		1									2

NZ MANEUVERS VS VEL. BY MISS. SEG. DESCNT, ALT. LESS, WGT. 5000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7						1										1
1.6																
1.5				1												1
1.4																
1.3		1	1	2	3	1										8
1.2	2	1			2		1									6
0.8																
0.7																
0.6																
0.5																
0.4																
0.2																
LESS																
TOTAL	2	2	1	3	5	2	1									16

NZ MANEUVERS VS VEL. BY MISS. SEG. DESCNT, ALT. 1000, WGT. 5000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4						1										1
1.3																
1.2						1										1
0.8																
0.7					1											1
0.6																
0.5																
0.4																
0.2																
LESS																
TOTAL					1	2										3

NZ MANEUVERS VS VEL. BY MISS. SEG. DESCNT, ALT. 2000, WGT. 5000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3																
1.2																
0.8																
0.7							1									1
0.6																
0.5																
0.4																
0.2																
LESS																
TOTAL							1									1

TABLE XXVII, contd.

NZ MANEUVERS VS VEL. BY MISS. SEG. STEADY, ALT. LESS, WGT. 5000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4									1							1
1.3						2	1	1	1							5
1.2				2	3	1		2	3							11
0.8																
0.7				2		1	1	3	4							11
0.6																
0.5																
0.4																
0.2																
LESS																
TOTAL				4	3	4	2	6	9							28
TIME	11.1	0.2	0.2	1.4	3.1	6.8	6.4	5.6	5.5	1.8	1.4	0.9	0.	0.	0.	44.5

NZ MANEUVERS VS VEL. BY MISS. SEG. STEADY, ALT. 1000, WGT. 5000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3					1		2		1	1						5
1.2				1		1	3	6	12	1						24
0.8																
0.7			1					7	6	3						17
0.6								1	2							3
0.5																
0.4																
0.2																
LESS																
TOTAL			1	1	1	1	5	14	21	5						49
TIME	4.7	0.	0.2	1.4	1.6	3.1	6.3	17.4	19.9	5.7	0.0	0.	0.	0.	0.	60.4

NZ MANEUVERS VS VEL. BY MISS. SEG. STEADY, ALT. 2000, WGT. 5000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3																
1.2					1	2	1									4
0.8																
0.7							2									2
0.6																
0.5																
0.4																
0.2																
LESS																
TOTAL					1	2	3									6
TIME	0.	0.	0.8	2.1	7.1	9.7	7.4	7.3	0.7	0.1	0.	0.	0.	0.	0.	35.2

NZ MANEUVERS VS VEL. BY MISS. SEG. ASCENT, ALT. LESS, WGT. 6000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5				1												1
1.4	1	1														2
1.3	1	1	1	2												5
1.2	8	17	5	8	5	4	3	1								51
0.8																
0.7		1	1	1	1	1										5
0.6						1										1
0.5																
0.4																
0.2																
LESS																
TOTAL	10	20	7	12	6	6	3	1								65

TABLE XXVII, contd.

NZ MANEUVERS VS VEL. BY MISS. SEG. ASCENT, ALT. 1000, WGT. 6000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5		1														1
1.4		2		1												3
1.3	2	1	2	1	2											8
1.2	9	15	9	7	9	4	4	2	1							60
0.8																
0.7	1	4	2	4	3	2	2		1							19
0.6		2	1													3
0.5																
0.4																
0.2																
LESS																
TOTAL	12	25	14	13	14	6	6	2	2							94

NZ MANEUVERS VS VEL. BY MISS. SEG. ASCENT, ALT. 2000, WGT. 6000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6							1									1
1.5																
1.4		1	2	2												5
1.3	2	2	3	4	1	2	1									13
1.2	5	16	3	12	9	12	8									65
0.8																
0.7		4		2	3	3	4									16
0.6																
0.5																
0.4																
0.2																
LESS																
TOTAL	7	23	8	18	13	17	14									100

NZ MANEUVERS VS VEL. BY MISS. SEG. MANUVR, ALT. LESS, WGT. 6000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8						1	1	1		1						4
1.7		3			1	1										5
1.6		3	2	3		2	1		1							12
1.5	1	2	1	2	7	7	5	3	2				1			31
1.4	3	9	11	7	6	13	15	15			1		1			81
1.3	1	15	11	26	27	44	19	20	11	3	3	1				181
1.2	9	26	30	62	58	36	41	26	21	5	4	1				319
0.8																
0.7		2	7	9	11	13	11	7	7	3	4	1				75
0.6				1	5	4	1	1								12
0.5		1		2		2	1	1								7
0.4						1										1
0.2																
LESS																
TOTAL	14	61	62	112	115	124	95	74	42	12	12	3	2			728

NZ MANEUVERS VS VEL. BY MISS. SEG. MANUVR, ALT. 1000, WGT. 6000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7					1		2	1								4
1.6			3	6	3		3	2								17
1.5		6	9	9	9	7	4	2		1						47
1.4		13	15	15	26	16	10	5	2							102
1.3	2	19	28	34	54	63	29	12	5	1						247
1.2	6	43	45	87	98	104	66	23	9	3	1	2	1			488
0.8																
0.7	2	8	7	19	27	19	22	13	9	1	1					128
0.6		1		3	6	4	3	2	1							20
0.5			1		1	1	2		1	1						7
0.4				1												1
0.2																
LESS																
TOTAL	10	90	108	174	225	214	141	60	27	7	2	2	1			1061

TABLE XXVII, contd.

NZ MANEUVERS VS VEL. BY MISS. SEG. MANUVR, ALT. 2000, WGT. 6000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8				1	1											2
1.7			3					1								4
1.6			1		1	1	3		2							8
1.5	1	1	2	5	3	5	2	2		1						22
1.4			5	12	7	6	3	6	1	2						42
1.3		7	13	26	22	14	4	6	7	1						100
1.2	5	24	27	55	61	32	26	18	10	2	4					264
0.8																
0.7	4	8	5	9	19	5	5	7	2		1					65
0.6	1		2	6	1		2	2	1							15
0.5			1		2		2									5
0.4																
0.2																
LESS																
TOTAL	11	40	59	114	117	63	47	42	23	6	5					527

NZ MANEUVERS VS VEL. BY MISS. SEG. DESCNT, ALT. LESS, WGT. 6000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7		1														1
1.6		1	1	2			1									5
1.5		3		1	4		1									9
1.4	1	9	1	5	2	3	3	1								25
1.3	4	11	7	3	8	12	7	1	3							56
1.2	13	42	21	26	16	9	17	3	1		3					151
0.8																
0.7	3	3		5	2	8	2	1	1	1	1					25
0.6			1	1	4	2	1									9
0.5						4		1	1							6
0.4					1	1		1								3
0.2					1	4	1	1								7
LESS						1										1
TOTAL	21	70	31	41	38	44	33	9	6	1	4					298

NZ MANEUVERS VS VEL. BY MISS. SEG. DESCNT, ALT. 1000, WGT. 6000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6							1									1
1.5		3		1	1	2										7
1.4	1	10	1	2	7	1	1	1								24
1.3	1	18	11	9	11	4	2	2	1							59
1.2	11	33	19	22	17	15	13	5	1	1						137
0.8																
0.7	1	4	4	9	7	7	5	2								39
0.6		2			1		1	1								5
0.5			1					1								2
0.4							1									1
0.2								1								1
LESS																
TOTAL	14	70	36	43	44	29	24	13	2	1						276

NZ MANEUVERS VS VEL. BY MISS. SEG. DESCNT, ALT. 2000, WGT. 6000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6		1				2										3
1.5		1	4	1	3	4										13
1.4		2	3	2	5											12
1.3		10	2	7	5	4	3	1	2							34
1.2	3	17	16	13	14	23	8	4	1	1						100
0.8																
0.7		3	2	9	7	7	3	5								36
0.6		2		2	4	1										9
0.5				1	2	1	1									5
0.4		1			3		1									5
0.2					2	3	1									6
LESS						1										1
TOTAL	3	37	27	35	45	46	17	10	3	1						224

TABLE XXVII. contd.

NZ MANEUVERS VS VEL. BY MISS. SEG. STEADY, ALT. LESS, WGT. 6000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6							1	1								2
1.5	1					2	1	3								7
1.4		1	2	1	1	3	4	6	1	1	1					21
1.3		5	2	8	15	17	21	9	4	5	1		1			88
1.2	8	19	10	29	34	72	51	47	30	16	6	3	1			326
0.8																
0.7	2	7	11	13	23	48	40	45	24	21	9	3				246
0.6		1	2	1		4	5	4	4	4	2	1				28
0.5			2				1									3
0.4				1	1											2
0.2							1									1
LESS				1												1
TOTAL	11	33	29	54	74	146	125	115	63	47	19	7	2			725
TIME	179.2	38.5	47.5	78.4	185.3	479.6	410.2	165.1	80.8	46.7	14.1	6.4	5.8	0.8	0.	1734.3

NZ MANEUVERS VS VEL. BY MISS. SEG. STEADY, ALT. 1000, WGT. 6000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5				1	1				1							3
1.4			1		4	1	1									7
1.3		1	2	4	10	13	9	7	3	2						51
1.2	3	15	28	23	80	112	89	72	39	15	3	1				480
0.8																
0.7	2	3	5	10	44	80	65	57	24	9	4					303
0.6				3	2	8	10	7	1	1						32
0.5																
0.4																
0.2																
LESS																
TOTAL	5	19	36	41	141	214	174	143	68	27	7	1				876
TIME	74.9	30.5	35.9	76.5	161.3	423.0	513.8	349.7	122.1	36.8	9.7	1.7	0.4	0.	0.	1836.2

NZ MANEUVERS VS VEL. BY MISS. SEG. STEADY, ALT. 2000, WGT. 6000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7			1	1		1					1					4
1.6																
1.5							1									1
1.4			2	7	2	3	5			1						14
1.3		1	4	12	16	19	11	8	4	2	2					79
1.2		8	20	44	90	122	102	70	45	15	7	5				528
0.8																
0.7	2	7	11	30	60	98	79	52	20	13	6	1				379
0.6		1		4	5	5	16	5	5	4	1					46
0.5						1		1			1					3
0.4																
0.2																
LESS																
TOTAL	2	17	38	92	173	249	214	136	74	35	18	6				1054
TIME	28.8	33.7	69.4	184.2	361.8	687.5	668.3	527.3	240.8	78.0	16.2	6.0	1.1	0.	0.	2923.0

NZ MANEUVERS VS VEL. BY MISS. SEG. STEADY, ALT. 5000, WGT. 6000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3						1										1
1.2						4	7	1	2	1						15
0.8																
0.7						7	5	6	5							23
0.6																
0.5																
0.4																
0.2								1								1
LESS																
TOTAL						12	12	8	7	1						40
TIME	0.	0.5	0.5	1.9	15.4	74.3	133.0	109.5	29.6	1.6	0.	0.	0.	0.	0.	366.3

TABLE XXVII. contd.

NZ MANEUVERS VS VEL. BY MISS. SEG. ASCENT, ALT. LESS, WGT. 7000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5						1										1
1.4				1	1	1										3
1.3			1	3	1	2										7
1.2	4	8	7	6	2	3	2	5								37
0.8																
0.7	1	6	2	3	2		3	1								18
0.6		2						1								3
0.5																
0.4																
0.2																
LESS																
TOTAL	5	16	10	13	6	7	5	7								69

NZ MANEUVERS VS VEL. BY MISS. SEG. ASCENT, ALT. 1000, WGT. 7000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5					1											1
1.4		1			1	2										4
1.3	2	7	1	3	4	3	2	3	2							27
1.2	12	18	11	6	2	10	1	1	4	1						66
0.8																
0.7		4	7	1	2		4	3	3	2						26
0.6			1	1				2		1						5
0.5							1	1	1	2						5
0.4																
0.2																
LESS																
TOTAL	14	30	20	11	10	15	8	10	10	6						134

NZ MANEUVERS VS VEL. BY MISS. SEG. ASCENT, ALT. 2000, WGT. 7000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4					1											1
1.3		3			1											4
1.2	6	4	9	4	1		2									26
0.8																
0.7	1		1													2
0.6		1														1
0.5																
0.4																
0.2																
LESS																
TOTAL	7	8	10	4	3		2									34

NZ MANEUVERS VS VEL. BY MISS. SEG. MANUVR, ALT. LESS, WGT. 7000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8							1		1							2
1.7				1	1			1								3
1.6			2	1	1	3	3	1	1		1					13
1.5		1	3	5	4	5	4	3	2							27
1.4		1	7	12	17	13	22	9	4	2						87
1.3	2	3	15	21	28	33	28	20	15	3						168
1.2		25	38	47	46	79	61	44	24	5						369
0.8																
0.7		3	8	2	7	13	15	12	7	1						68
0.6			1		4	3	3	7	3	2	1					24
0.5				1		1					1					3
0.4					1											1
0.2																
LESS																
TOTAL	2	33	74	90	109	150	137	97	57	13	3					765

TABLE XXVII, contd.

NZ MANEUVERS VS VEL. BY MISS. SEG. MANUVR, ALT. 1000, WGT. 7000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8									1	1						2
1.7				1	1				1	1						4
1.6		1		1	1		3	2	1							9
1.5	1	4	3	3	3	4	5									23
1.4		6	9	10	15	13	10	4	2							69
1.3	3	15	15	28	28	35	35	20	12	1	3					195
1.2	7	25	26	47	75	68	57	35	18	7	1					366
0.8																
0.7		8	14	23	29	32	18	20	5	4	2					155
0.6		4	1	3	10	9	9	11	2	1						50
0.5		1		1	1						1					4
0.4						2										2
0.2																
LESS																
TOTAL	11	64	68	117	163	163	137	92	42	15	7					879

NZ MANEUVERS VS VEL. BY MISS. SEG. MANUVR, ALT. 2000, WGT. 7000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5			1	1		1		1								4
1.4			5	2	2	1	3	1								14
1.3	1	2	9	11	8	8	8	2	1							50
1.2	1	11	16	25	28	13	13	4	4	1						116
0.8																
0.7	1	2	3	1	12	7	3	1	1							31
0.6	1			2	1		1	1	2							8
0.5																
0.4																
0.2																
LESS																
TOTAL	4	15	34	42	51	30	28	10	8	1						223

NZ MANEUVERS VS VEL. BY MISS. SEG. DESCNT, ALT. LESS, WGT. 7000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7									1							1
1.6																
1.5						1										1
1.4		2		2	4	2	1	1								12
1.3	2	5	4	4	2	1	1	1								20
1.2	1	15	5	8	7	6	1	2								47
0.8																
0.7		1			1	1	1	3								7
0.6							1	1	1							3
0.5																
0.4																
0.2																
LESS																
TOTAL	3	23	9	14	14	11	5	8	4							91

NZ MANEUVERS VS VEL. BY MISS. SEG. DESCNT, ALT. 1000, WGT. 7000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0					1											1
1.8																
1.7																
1.6		1														1
1.5						1										1
1.4		1		1	1	1	1	1								6
1.3	2	2	2	4	11	5	1	2	1		1					31
1.2		9	5	6	20	7	3	3	4							57
0.8																
0.7		2	1	2	1	2	1	2	2							13
0.6					2			2								4
0.5										1						1
0.4																
0.2																
LESS																
TOTAL	2	15	8	13	36	16	6	10	7	1	1					115

TABLE XXVII, contd.

NZ MANEUVERS VS VEL. BY MISS. SEG. DESCNT, ALT. 2000, WGT. 7000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4				1			1	1								3
1.3				3	1		2	1								7
1.2	1	2	5	3	3	3	7	3		1	2					30
0.8																
0.7	1	3		1	1	2				1						9
0.6					1											1
0.5																
0.4						1										1
0.2																
LESS																
TOTAL	2	5	5	4	6	6	10	5		2	2					51

NZ MANEUVERS VS VEL. BY MISS. SEG. STEADY, ALT. LESS, WGT. 7000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5					2											2
1.4					4	5	1	1	1							12
1.3			1		10	11	9	12	4	6	1					54
1.2	1		4	4	20	25	40	30	18	12	3					157
0.8																
0.7			5	3	12	20	40	29	15	11	1					136
0.6						6	7	6	14	2	6					41
0.5						2		2	1	1	1	1				8
0.4									1							1
0.2																
LESS																
TOTAL	1		10	7	48	69	97	80	54	32	12	1				411
TIME	85.3	14.4	12.6	14.4	37.0	105.6	173.4	99.9	52.4	34.7	6.1	2.5	1.8	1.0	0.	640.9

NZ MANEUVERS VS VEL. BY MISS. SEG. STEADY, ALT. 1000, WGT. 7000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5				1	1	1	1									4
1.4		2		1	4		1	5	2							15
1.3		2	3	7	9	10	14	14	7	1						67
1.2	2	7	7	26	37	46	37	56	26	6		1				251
0.8																
0.7	1	1	3	15	25	25	49	49	22	2						192
0.6			1		4	8	8	10	8	2						41
0.5								1	1							2
0.4																
0.2																
LESS																
TOTAL	3	12	14	50	80	90	110	135	66	11		1				572
TIME	106.1	35.6	34.8	58.7	104.3	126.5	198.4	202.6	67.3	12.3	0.8	0.5	0.	0.	0.	949.6

NZ MANEUVERS VS VEL. BY MISS. SEG. STEADY, ALT. 2000, WGT. 7000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6								1								1
1.5					1											1
1.4			1	1	1	1	1	1								6
1.3		2	2	5	6	7	5	7	5	1						40
1.2	1	8	24	9	42	51	44	42	21	11	2					245
0.8																
0.7	1	2	7	14	22	34	23	21	13	8	3					148
0.6				1	5	5	2	4	1	1						19
0.5					1											1
0.4																
0.2																
LESS																
TOTAL	2	12	24	30	78	98	75	76	40	21	5					461
TIME	24.7	25.4	43.0	104.6	164.5	266.5	229.3	197.0	117.5	22.5	3.0	0.3	0.1	0.	0.	1198.4

TABLE XXVII. contd.

NZ MANEUVERS VS VEL. BY MISS. SEG. ASCENT, ALT. 1000, WGT. 8000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3			1			1										2
1.2				1												1
0.8																
0.7																
0.6																
0.5																
0.4																
0.2																
LESS																
TOTAL			1	1		1										3

NZ MANEUVERS VS VEL. BY MISS. SEG. MANUVR, ALT. 1000, WGT. 8000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6				1				1								2
1.5				1		1		1								3
1.4			1	1	3	1										6
1.3				2	3	6	4	2								17
1.2				7	3	3	3	2	1							19
0.8																
0.7		1		3	2			1	1							8
0.6				1		1										2
0.5																
0.4																
0.2																
LESS																
TOTAL		1	1	16	11	12	7	7	2							57

NZ MANEUVERS VS VEL. BY MISS. SEG. STEADY, ALT. 1000, WGT. 8000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4																
1.3						1	2									3
1.2						1	2	1	2							6
0.8																
0.7									2							2
0.6							1									1
0.5																
0.4																
0.2																
LESS																
TOTAL						2	5	1	4							12
TIME	0.	0.	0.	0.	1.1	1.3	2.1	2.4	2.5	0.	0.	0.	0.	0.	0.	9.5

NZ MANEUVERS VS VEL. BY MISS. SEG. DESCNT, ALT. 1000, WGT. 8000

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6																
1.5																
1.4						1										1
1.3																
1.2																
0.8																
0.7																
0.6						1										1
0.5																
0.4																
0.2																
LESS																
TOTAL						2										2

TABLE XXVIII

NZ MANEUVERS VS MU BY MISS. SEG. MANUVR, ALT. LESS, CT/S 0.06

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8					3	3			6
1.7				3	5				8
1.6				7	15	3			25
1.5		1		7	40	8	1		57
1.4		1	2	30	113	21	1		168
1.3			3	45	242	58	1		349
1.2		1	11	128	444	103	1		688
0.8									
0.7				19	88	35	1		143
0.6				1	25	10			36
0.5				1	7	2			10
0.4					2				2
0.2									
LESS									
TOTAL		3	16	241	984	243	5		1492

NZ MANEUVERS VS MU BY MISS. SEG. DESCNT, ALT. LESS, CT/S 0.06

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7			1		1	1			3
1.6				3	2				5
1.5			1	3	7				11
1.4			3	13	20	1			37
1.3			5	28	44	4			81
1.2		4	15	82	92	9			202
0.8									
0.7		2		7	18	4			31
0.6				1	9	2			12
0.5					5	1			6
0.4					2	1			3
0.2					6	1			7
LESS					1				1
TOTAL		6	25	137	207	24			399

NZ MANEUVERS VS MU BY MISS. SEG. MANUVR, ALT. 1000, CT/S 0.06

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8						2			2
1.7					6	2			8
1.6				5	21	2			28
1.5			1	24	46	2			73
1.4			1	41	124	11			177
1.3	1	1	4	76	342	36			460
1.2		3	10	154	625	81	1		874
0.8									
0.7			2	38	213	38			291
0.6				6	55	11			72
0.5				2	6	3			11
0.4					3				3
0.2									
LESS									
TOTAL	1	4	18	346	1441	188	1		1999

NZ MANEUVERS VS MU BY MISS. SEG. DESCNT, ALT. 1000, CT/S 0.06

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0					1				1
1.8									
1.7									
1.6				1	1				2
1.5				3	5				8
1.4			2	11	17	2			32
1.3		1	4	32	48	4			89
1.2		2	14	63	102	13			194
0.8									
0.7			1	11	39	3			53
0.6				2	7	1			10
0.5				1		2			3
0.4					1				1
0.2						1			1
LESS									
TOTAL		3	21	124	220	26			394

NZ MANEUVERS VS MU BY MISS. SEG. MANUVR, ALT. 2000, CT/S 0.06

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8					2				2
1.7				2	2				4
1.6				1	5	2			8
1.5		1		4	18	3			26
1.4				12	36	8			56
1.3		1	1	31	102	15			150
1.2			6	86	255	35			382
0.8									
0.7		1	5	15	67	8			96
0.6		1	1	2	14	5			23
0.5				1	4				5
0.4									
0.2									
LESS									
TOTAL		4	13	154	505	76			792

NZ MANEUVERS VS MU BY MISS. SEG. DESCNT, ALT. 2000, CT/S 0.06

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7									
1.6				1	2				3
1.5				4	9				13
1.4			1	5	9				15
1.3			1	12	24	3			40
1.2		1	3	40	75	10			129
0.8									
0.7			1	9	30	6			46
0.6				2	8				10
0.5					5				5
0.4				1	5				6
0.2					6				6
LESS					1				1
TOTAL		1	6	74	174	19			274

TABLE XXVIII, contd.

NZ MANEUVERS VS MU BY MISS. SEG. DESCNT, ALT. LESS, CT/S LESS

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7									
1.6									
1.5									
1.4									
1.3			1		2				3
1.2				2					2
0.8									
0.7			1						1
0.6									
0.5									
0.4									
0.2									
LESS									
TOTAL			2	2	2				6

NZ MANEUVERS VS MU BY MISS. SEG. DESCNT, ALT. 1000, CT/S LESS

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7									
1.6									
1.5									
1.4									
1.3			1						1
1.2				1					1
0.8									
0.7									
0.6									
0.5									
0.4									
0.2									
LESS									
TOTAL			1	1					2

NZ MANEUVERS VS MU BY MISS. SEG. STEADY, ALT. LESS, CT/S LESS

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7									
1.6									
1.5									
1.4									
1.3									
1.2					3				3
0.8									
0.7									
0.6									
0.5									
0.4									
0.2									
LESS									
TOTAL					3				3
TIME	0.	5.7	0.9	0.2	11.2	0.	0.	0.	18.0

NZ MANEUVERS VS MU BY MISS. SEG. ASCENT, ALT. LESS, CT/S 0.06

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7									
1.6									
1.5					2				
1.4				1	3				5
1.3				2	8				12
1.2			6	8	36	36	3		89
0.8									
0.7				1	10	12			23
0.6					2	1	1		4
0.5									
0.4									
0.2									
LESS									
TOTAL			6	12	51	62	4		135

NZ MANEUVERS VS MU BY MISS. SEG. ASCENT, ALT. 1000, CT/S 0.06

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7									
1.6									
1.5					1	1			2
1.4					3	4			7
1.3	1			3	12	17	4		37
1.2	1	10		13	47	48	8		127
0.8									
0.7				1	16	19	9		45
0.6					3	2	3		8
0.5						2	3		5
0.4									
0.2									
LESS									
TOTAL	2	10	17	82	93	27			231

NZ MANEUVERS VS MU BY MISS. SEG. ASCENT, ALT. 2000, CT/S 0.06

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7									
1.6					1				1
1.5									
1.4				3	3				6
1.3		1	2	7	7				17
1.2	2	5	4	34	46				91
0.8									
0.7			1	5	12				18
0.6				1					1
0.5									
0.4									
0.2									
LESS									
TOTAL	2	6	7	50	69				134

TABLE XXIX

NZ MANEUVERS VS MU BY MISS. SEG. STEADY, ALT. LESS, CT/S 0.06

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7									
1.6					1	1			2
1.5		1			5	3			9
1.4				2	20	12			34
1.3				9	101	36	1		147
1.2		3	6	33	302	146	1		491
0.8									
0.7		1	1	21	223	146	1		393
0.6				3	27	39			69
0.5				2	5	4			11
0.4					2	1			3
0.2					1				1
LESS					1				1
TOTAL		5	7	70	688	388	3		1161
TIME	0.6	232.7	32.7	108.2	1600.2	414.1	13.0	0.	2401.5

NZ MANEUVERS VS MU BY MISS. SEG. STEADY, ALT. 2000, CT/S 0.06

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7					1	2	1		4
1.6						1			1
1.5					2				2
1.4					3	16	1		20
1.3					9	87	23		119
1.2				1	52	548	174	2	777
0.8									
0.7		2		1	26	392	108		529
0.6					1	46	18		65
0.5					2	2			4
0.4									
0.2									
LESS									
TOTAL		2		2	97	1095	328	2	1527
TIME	0.1	45.3		8.8	179.5	2970.3	949.4	2.8	0. 4156.2

NZ MANEUVERS VS MU BY MISS. SEG. STEADY, ALT. 1000, CT/S 0.06

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7									
1.6									
1.5				1	5	1			7
1.4				3	16	3			22
1.3				8	95	23			126
1.2		4	3	49	500	204	1		761
0.8									
0.7		3		12	344	155			514
0.6				1	52	24			77
0.5						2			2
0.4									
0.2									
LESS									
TOTAL		7	3	74	1012	412	1		1509
TIME	0.5	167.7	21.0	135.4	1869.5	658.9	1.4	0.	2854.6

NZ MANEUVERS VS MU BY MISS. SEG. STEADY, ALT. 5000, CT/S 0.06

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7									
1.6									
1.5									
1.4									
1.3					1				1
1.2					11	4			15
0.8									
0.7					12	10			22
0.6									
0.5									
0.4									
0.2					1				1
LESS									
TOTAL					25	14			39
TIME	0.	0.	0.	1.0	227.3	118.2	0.	0.	346.5

TABLE XXIX, contd.

NZ MANEUVERS VS MU BY MISS. SEG. MANUVR, ALT. LESS, CT/S 0.09

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7									
1.6									
1.5					1				1
1.4									
1.3									
1.2									
0.8									
0.7									
0.6									
0.5									
0.4									
0.2									
LESS									
TOTAL					1				1

NZ MANEUVERS VS MU BY MISS. SEG. DESCNT, ALT. 2000, CT/S 0.09

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7									
1.6									
1.5									
1.4									
1.3						1			1
1.2						1			1
0.8									
0.7									
0.6									
0.5									
0.4									
0.2									
LESS									
TOTAL						2			2

NZ MANEUVERS VS MU BY MISS. SEG. STEADY, ALT. 5000, CT/S 0.09

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7									
1.6									
1.5									
1.4									
1.3									
1.2									
0.8									
0.7					1				1
0.6									
0.5									
0.4									
0.2									
LESS									
TOTAL					1				1
TIME	0.	0.	0.	0.	17.4	7.1	0.	0.	24.5

TABLE XXX

NZ MANEUVERS VS VEL. BY MISS. SEG. ASCENT

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7																
1.6							1									1
1.5		1		1	1	1										4
1.4	1	5	2	4	3	3										18
1.3	7	14	9	11	9	8	3	3	2							66
1.2	45	78	44	44	28	33	20	9	5	1						307
0.8																
0.7	3	19	13	11	11	6	13	4	4	2						86
0.6		5	2	1		1		3		1						13
0.5							1	1	1	2						
0.4																
0.2																
LESS																
TOTAL	56	122	70	72	52	52	38	20	12	6						500

TABLE XXX, contd.

NZ MANEUVERS VS VEL. BY MISS. SEG. MANUVR

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8				1	1	1	2	1	2	2						10
1.7		3	3	2	4	1	2	3	1	1						20
1.6		4	8	12	6	6	13	6	5		1					61
1.5	3	14	19	26	26	30	20	12	4	2			1			157
1.4	3	29	53	59	76	63	63	40	9	4	1		1			401
1.3	9	61	91	148	170	204	127	82	51	9	6	1				959
1.2	28	154	183	330	370	335	268	152	87	23	10	3	1			1944
0.8																
0.7	7	32	44	66	107	89	74	61	32	9	8	1				530
0.6	2	5	4	16	27	21	19	24	9	3	1					131
0.5		2	2	4	4	4	5	1	1	1	2					26
0.4				1	1	3										5
0.2																
LESS																
TOTAL	52	304	407	665	792	757	593	382	201	54	29	5	3			4244

NZ MANEUVERS VS VEL. BY MISS. SEG. DESCNT

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0					1											1
1.8																
1.7		1				1			1							3
1.6		3	1	2		2	2									10
1.5		7	4	4	8	8	1									32
1.4	2	24	5	13	19	9	7	5								84
1.3	9	47	27	32	41	27	16	8	7		1					215
1.2	31	119	71	78	79	64	50	20	9	3	5					529
0.8																
0.7	5	16	7	24	20	27	13	13	3	2	1					131
0.6		4	1	3	12	4	3	4	1							32
0.5			1	1	2	5	1	2	1	1						14
0.4		1			4	2	2	1								10
0.2					3	7	2	2								14
LESS						2										2
TOTAL	47	222	117	157	189	158	97	55	22	6	7					1077

NZ MANEUVERS VS VEL. BY MISS. SEG. STEADY

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0																
1.8																
1.7			1	1		1					1					4
1.6							1	2								3
1.5	1			2	5	3	3	3	1							18
1.4		3	6	4	16	13	13	13	5	2	1					76
1.3		11	14	36	67	81	74	58	29	18	4		1			393
1.2	15	57	83	138	307	437	376	327	198	77	21	10	1			2047
0.8																
0.7	8	20	43	87	186	313	304	269	135	67	23	4				1459
0.6		2	3	9	16	36	49	37	35	14	9	1				211
0.5			2		1	3	1	4	2	1	2	1				17
0.4				1	1				1							3
0.2							1	1								2
LESS				1												1
TOTAL	24	93	152	279	599	887	822	714	406	179	61	16	2			4234
TIME	510.7	178.8	244.8	523.5	1065.2	2186.6	2349.8	1683.8	739.1	240.1	51.3	18.2	9.2	1.8	0.	9802.9

TABLE XXXI

NZ MANEUVERS VS VELOCITY COMPOSITE

	LESS	40	60	65	70	75	80	85	90	95	100	105	110	115	120	TOTAL
2.4																
2.2																
2.0					1											1
1.8				1	1	1	2	1	2	2						10
1.7		4	4	3	4	3	2	3	2	1	1					27
1.6		7	9	14	6	8	17	8	5		1					75
1.5	4	22	23	33	40	42	24	15	5	2			1			211
1.4	6	61	66	80	114	88	83	58	14	6	2		1			579
1.3	25	133	141	227	287	320	220	151	89	27	11	1	1			1633
1.2	119	408	381	590	784	869	714	508	299	104	36	13	2			4827
0.8																
0.7	23	87	107	188	324	435	404	347	174	80	32	5				2206
0.6	2	16	10	29	55	62	71	68	45	18	10	1				387
0.5		2	5	5	7	12	8	8	5	5	4	1				62
0.4		1		2	6	5	2	1	1							18
0.2					3	7	3	3								16
LESS				1		2										3
TOTAL	179	741	746	1173	1632	1854	1550	1171	641	245	97	21	5			10055

TABLE XXXII

NZ MANEUVERS VS MU BY MISS. SEG. ASCENT

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7									
1.6					1				1
1.5				1	3				4
1.4			1	7	10				18
1.3	1	1	7	21	32	4			66
1.2	3	21	25	117	130	11			307
0.8									
0.7			3	31	43	9			86
0.6				6	3	4			13
0.5					2	3			5
0.4									
0.2									
LESS									
TOTAL		22	36	183	224	31			500

NZ MANEUVERS VS MU BY MISS. SEG. DESCNT

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0					1				1
1.8									
1.7			1		1	1			3
1.6				5	5				10
1.5			1	10	21				32
1.4			6	29	46	3			84
1.3		1	12	72	118	12			215
1.2		7	32	188	269	33			529
0.8									
0.7		2	9	27	86	13			131
0.6				5	24	3			32
0.5				1	10	3			14
0.4				1	8	1			10
0.2					12	2			14
LESS					2				2
TOTAL		10	55	338	603	71			1077

NZ MANEUVERS VS MU BY MISS. SEG. MANUVR

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8					5	5			10
1.7				5	13	2			20
1.6				13	41	7			61
1.5		2	1	35	105	13	1		157
1.4		1	3	83	273	40	1		401
1.3	1	2	8	152	686	109	1		959
1.2		4	27	368	1324	219	2		1944
0.8									
0.7		1	7	72	368	81	1		530
0.6		1	1	9	94	26			131
0.5				4	17	5			26
0.4					5				5
0.2									
LESS									
TOTAL	1	11	47	741	2931	507	6		4244

NZ MANEUVERS VS MU BY MISS. SEG. STEADY

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0									
1.8									
1.7					1	2	1		4
1.6					1	2			3
1.5		1		1	12	4			18
1.4				8	52	16			76
1.3				26	284	82	1		393
1.2		7	10	134	1364	528	4		2047
0.8									
0.7		6	2	59	972	419	1		1459
0.6				5	125	81			211
0.5				2	7	8			17
0.4					2	1			3
0.2					2				2
LESS					1				1
TOTAL		14	12	236	2824	1142	6		4234
TIME	1.2	452.3	63.5	424.3	6696.5	2147.7	17.3	0.	9802.9

TABLE XXXIII

NZ MANEUVERS VS MU COMPOSITE

	LESS	0.00	0.05	0.10	0.15	0.20	0.25	0.30	TOTAL
2.4									
2.2									
2.0					1				1
1.8					5	5			10
1.7			1	6	16	4			27
1.6				18	48	9			75
1.5		3	2	47	141	17	1		211
1.4		1	10	127	381	59	1		579
1.3	2	4	27	271	1120	207	2		1633
1.2	3	39	94	807	3087	791	6		4827
0.8									
0.7		9	15	189	1469	522	2		2206
0.6		1	1	25	246	114			387
0.5				7	36	19			67
0.4				1	15	2			18
0.2					14	2			16
LESS					3				3
TOTAL	5	57	150	1498	6582	1751	12		10055

TABLE XXXIV

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -2500, OAT 30

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300						
310		0.1				0.1
320						
330						
340						
TOTAL		0.1				0.1

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -2500, OAT 40

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS	0.1					0.1
300	0.1					0.1
310		0.1				0.1
320						
330						
340						
TOTAL	0.1	0.1				0.2

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -2500, OAT 60

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300						
310		0.1				0.1
320						
330						
340						
TOTAL		0.1				0.1

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -2500, OAT 70

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300						
310				0.1		0.1
320		0.1	0.2			0.2
330						
340						
TOTAL		0.1	0.2	0.1		0.3

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -2500, OAT 80

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300						
310						
320			0.1	0.1		0.2
330						
340						
TOTAL			0.1	0.1		0.2

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -2000, OAT 20

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300						
310			0.1			0.1
320						
330						
340						
TOTAL			0.1			0.1

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -2000, OAT 30

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300						
310		0.2	0.1			0.3
320	0.1					0.1
330						
340						
TOTAL	0.1	0.2	0.1			0.4

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -2000, OAT 50

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300	0.1					0.1
310		0.1	0.1			0.2
320		0.1				0.1
330						
340						
TOTAL	0.1	0.2	0.1			0.3

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -2000, OAT 70

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300						
310	0.2	0.2	0.1			0.5
320			0.2			0.2
330						
340						
TOTAL	0.2	0.2	0.3			0.7

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -2000, OAT 80

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300						
310			0.1			0.1
320						
330						
340						
TOTAL			0.1			0.1

TABLE XXXIV, contd.

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -1500, OAT 20

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300						
310	0.1	0.4	0.1			0.7
320						
330						
340						
TOTAL	0.1	0.4	0.1			0.7

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -1500, OAT 30

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300						
310	0.3	1.0	0.9	0.2		2.5
320		0.6				0.6
330						
340						
TOTAL	0.3	1.6	0.9	0.2		3.1

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -1500, OAT 40

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300						
310	0.2	0.9	0.5			1.6
320	0.4					0.4
330						
340						
TOTAL	0.6	0.9	0.5			2.0

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -1500, OAT 50

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300						
310		0.2	0.1	0.1		0.4
320		0.6				0.6
330						
340						
TOTAL		0.9	0.1	0.1		1.1

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -1500, OAT 60

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300	0.3					0.3
310	0.1	0.2	1.2	0.1		1.5
320		0.1	0.3	0.1		0.5
330						
340						
TOTAL	0.3	0.3	1.5	0.2		2.3

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -1500, OAT 70

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300			0.1			0.1
310		0.2	0.6	0.2		1.1
320		0.5	0.7	0.1		1.3
330						
340						
TOTAL		0.7	1.5	0.3		2.5

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -1500, OAT 80

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300		0.5	0.2			0.7
310		0.1	0.4			0.5
320		0.3	0.1	0.1		0.5
330						
340						
TOTAL		0.9	0.7	0.1		1.7

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -1500, OAT 90

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300						
310		0.1	0.3			0.4
320			0.1			0.1
330						
340						
TOTAL		0.1	0.4			0.5

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -1000, OAT 10

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300						
310		0.4	0.7			1.1
320		0.2				0.2
330						
340						
TOTAL		0.6	0.7			1.3

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -1000, OAT 20

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300						
310		2.5	2.7			5.2
320		0.2	0.5			0.6
330						
340						
TOTAL		2.7	3.1			5.8

XXIV, contd.

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -1000, OAT 30

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300						
310		12.2	9.1			21.3
320	0.1	2.7	1.5			4.3
330						
340						
TOTAL	0.1	14.9	10.6			25.6

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -1000, OAT 40

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300						
310	0.3	9.2	7.3			16.8
320		0.5	2.2			2.7
330						
340						
TOTAL	0.3	9.7	9.5			19.5

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -1000, OAT 50

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300		0.4	2.2	0.4		3.0
310		5.4	12.6	1.9		19.9
320	0.2	10.5	6.4	0.3		17.5
330		0.1	0.2			0.3
340						
TOTAL	0.2	16.5	21.5	2.5		40.7

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -1000, OAT 60

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300		0.1	1.6			1.7
310		4.1	13.4	1.5		18.9
320	0.2	6.6	8.7	0.4		15.9
330		1.0	0.3			1.3
340						
TOTAL	0.2	11.7	24.0	1.9		37.8

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -1000, OAT 70

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300		0.7	3.4			4.1
310		5.6	14.8	2.2		22.6
320		5.2	9.8			15.0
330		0.6	0.8			1.4
340						
TOTAL		12.0	28.9	2.2		43.1

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -1000, OAT 80

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300		0.8	4.6			5.4
310		4.7	12.2	0.2		17.0
320	0.5	3.6	2.6			6.7
330		0.4				0.4
340						
TOTAL	0.5	9.5	19.3	0.2		29.5

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -1000, OAT 90

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300			0.1			0.1
310		3.3	2.9			6.1
320		0.2				0.2
330						
340						
TOTAL		3.4	2.9			6.4

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -500, OAT 10

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300			0.9	0.6		1.5
310		0.8	8.5			9.3
320	1.1	0.3	0.1			1.5
330						
340						
TOTAL	1.1	1.1	9.5	0.6		12.3

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -500, OAT 20

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300		0.1	9.5	0.1		9.7
310		6.9	144.4	10.9		162.2
320		2.0	16.2			18.3
330						
340						
TOTAL		9.0	170.2	11.0		190.2

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -500, OAT 30

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300		0.3	17.5	1.7	0.2	19.8
310	1.7	78.1	534.4	31.8	0.9	646.8
320	0.4	78.9	177.0	0.3		256.6
330						
340						
TOTAL	2.1	157.3	728.9	33.9	1.1	923.2

TABLE XXXIV, contd.

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -500, OAT 40

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300		0.1	3.6	0.3		3.9
310	0.2	59.8	611.1	50.1	1.0	722.2
320	0.2	3.9	195.2	6.9		206.3
330						
340						
TOTAL	0.4	63.7	809.9	57.3	1.0	932.4

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -500, OAT 50

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS		0.2	0.8			1.0
300		10.7	34.1	7.4	0.3	52.5
310	0.6	30.8	707.4	107.2	0.8	846.9
320	0.1	12.3	422.4	37.7	0.8	473.3
330			9.9			9.9
340						
TOTAL	0.8	53.9	1174.6	152.4	2.0	1383.6

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -500, OAT 60

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS			1.8	0.5		2.3
300		19.0	121.9	12.4	0.1	153.3
310	0.5	53.4	1151.3	221.8	0.2	1427.3
320	0.3	46.0	575.0	74.6		695.8
330		3.4	15.1			18.6
340						
TOTAL	0.8	121.8	1865.1	309.2	0.3	2297.3

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -500, OAT 70

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS			1.4			1.4
300	0.0	2.4	241.3	9.4		253.2
310	0.2	43.7	1008.9	237.6	1.1	1291.7
320	0.1	31.1	611.2	74.5		717.0
330		2.3	6.4			8.6
340						
TOTAL	0.4	79.5	1869.3	321.6	1.1	2271.9

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -500, OAT 80

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS		0.1	0.7	0.2		0.9
300	0.1	2.6	142.6	3.2		147.8
310	0.1	20.8	609.0	101.1		731.0
320		13.5	200.2	13.5		227.2
330		0.1	1.2			1.3
340						
TOTAL	0.2	36.5	953.7	117.9		1108.2

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -500, OAT 90

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300		0.7	14.5	2.2		17.4
310		3.1	102.4	3.2		108.6
320			25.4	4.1		29.5
330						
340						
TOTAL		3.8	142.3	9.5		155.5

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB LESS, OAT 30

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300						
310		0.1				0.1
320						
330						
340						
TOTAL		0.1				0.1

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB LESS, OAT 70

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300	0.1					0.1
310	0.1					0.1
320						
330						
340						
TOTAL	0.1					0.1

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB 500, OAT 10

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300				0.8		0.8
310			0.8			0.8
320						
330						
340						
TOTAL			0.8	0.8		1.6

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB 500, OAT 20

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300						
310		0.1	8.6	0.2		8.8
320			0.5			0.5
330						
340						
TOTAL		0.1	9.1	0.2		9.4

TABLE XXXIV, contd.

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB 500, OAT 30

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300						
310		1.6	19.0	5.1		25.7
320		1.1	4.0			5.1
330						
340						
TOTAL		2.7	23.0	5.1		30.8

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB 500, OAT 40

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300						
310		0.1	24.7	1.9		26.7
320			4.0	1.7		5.7
330						
340						
TOTAL		0.1	28.7	3.6		32.3

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB 500, OAT 50

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS			0.1			0.1
300		0.3	1.8	0.8	0.0	3.0
310		0.2	14.7	6.7	0.3	21.8
320			5.1	1.6		6.7
330			0.2			0.2
340						
TOTAL		0.5	21.8	9.1	0.3	31.9

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB 500, OAT 60

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS				0.1		0.1
300		0.1	3.6	1.0	0.2	4.9
310		0.8	24.3	12.4	0.1	37.6
320		0.2	16.3	2.9		19.3
330			0.2			0.2
340						
TOTAL		1.1	44.4	16.3	0.3	62.1

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB 500, OAT 70

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300			4.7	1.5		6.1
310		0.7	21.0	12.9	0.2	34.8
320		0.6	13.3	4.0		17.9
330		0.2	1.0			1.2
340						
TOTAL		1.5	40.0	18.3	0.2	60.1

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB 500, OAT 80

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS				0.1		0.1
300		0.1	3.0	0.4		3.5
310		0.4	19.2	8.0		27.6
320			9.7	1.4		11.1
330						
340						
TOTAL		0.5	31.8	10.0		42.3

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB 500, OAT 90

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300		0.1	0.2			0.3
310			5.6	2.0		7.5
320			2.2	0.2		2.4
330						
340						
TOTAL		0.1	8.0	2.2		10.3

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB 1000, OAT 20

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300						
310		0.1	0.4			0.4
320						
330						
340						
TOTAL		0.1	0.4			0.4

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB 1000, OAT 30

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300			0.2			0.2
310			1.3	0.6		1.8
320						
330						
340						
TOTAL			1.5	0.6		2.0

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB 1000, OAT 40

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300			0.2			0.2
310			0.5			0.5
320			0.2			0.2
330						
340						
TOTAL			0.9			0.9

TABLE XXXIV, contd.

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB 1000, OAT 50

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300						
310			0.3	0.8	0.2	1.3
320			0.1	1.3		1.4
330						
340						
TOTAL			0.4	2.1	0.2	2.7

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB 1000, OAT 60

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300			0.3	0.6		0.9
310			1.1	1.3		2.4
320			1.1	0.1		1.3
330						
340						
TOTAL			2.5	2.0		4.6

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB 1000, OAT 70

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300			0.1	0.2		0.3
310		0.1	1.2	0.7		2.0
320			0.8	0.5		1.3
330						
340						
TOTAL		0.1	2.1	1.3		3.5

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB 1000, OAT 80

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300			0.3	0.3		0.7
310			1.2	1.1		2.2
320		0.2	0.5			0.7
330						
340						
TOTAL		0.2	2.0	1.4		3.6

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB 1000, OAT 90

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300						
310			1.3	0.2		1.5
320						
330						
340						
TOTAL			1.3	0.2		1.5

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB 1500, OAT 40

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300						
310			0.2			0.2
320						
330						
340						
TOTAL			0.2			0.2

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB 1500, OAT 60

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300				0.8		0.8
310						
320						
330						
340						
TOTAL				0.8		0.8

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB 1500, OAT 70

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300						
310			0.4			0.4
320						
330						
340						
TOTAL			0.4			0.4

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB 1500, OAT 80

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300						
310				0.2		0.2
320						
330						
340						
TOTAL				0.2		0.2

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB 2000, OAT 30

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300						
310				0.1		0.1
320						
330						
340						
TOTAL				0.1		0.1

TABLE XXXIV, contd.

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB 2000, OAT 70

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300						
310				0.1		0.1
320						
330						
340						
TOTAL				0.1		0.1

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB 2000, OAT 80

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300						
310				0.2		0.2
320						
330						
340						
TOTAL				0.2		0.2

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB 2500, OAT 50

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300						
310						
320			0.1			0.1
330						
340						
TOTAL			0.1			0.1

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB 2500, OAT 60

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300						
310			0.1			0.1
320						
330						
340						
TOTAL			0.1			0.1

TABLE XXXV

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -2500

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS	0.1					0.1
300	0.1					0.1
310		0.3		0.1		0.4
320		0.1	0.3	0.1		0.4
330						
340						
TOTAL	0.1	0.3	0.3	0.2		0.9

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -2000

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300	0.1					0.1
310	0.2	0.5	0.5			1.2
320	0.1	0.1	0.2			0.3
330						
340						
TOTAL	0.5	0.5	0.6			1.6

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -1500

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300	0.3	0.5	0.4			1.1
310	0.7	3.2	4.2	0.6		8.6
320	0.4	2.2	1.2	0.3		4.1
330						
340						
TOTAL	1.3	5.8	5.8	0.9		13.8

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -1000

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300		[illegible].0	11.9	0.4		14.3
310	0.3	47.3	75.7	5.7		128.9
320	1.1	29.6	31.6	0.7		63.0
330		2.1	1.3			3.3
340						
TOTAL	1.4	81.0	120.4	6.8		209.6

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB -500

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS		0.3	4.7	0.6		5.6
300	0.1	35.2	585.8	37.3	0.7	659.2
310	3.4	297.4	4877.4	763.8	4.1	5946.1
320	2.2	188.0	2222.8	211.6	0.8	2625.5
330		5.8	32.6			38.4
340						
TOTAL	5.7	526.7	7723.3	1013.4	5.6	9274.7

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB LESS

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300	0.1					0.1
310	0.1	0.1				0.2
320						
330						
340						
TOTAL	0.1	0.1				0.2

TABLE XXXV, contd.

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB 500

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS			0.1	0.2		0.3
300		0.7	13.2	4.5	0.3	18.6
310		3.8	137.9	49.1	0.6	191.4
320		1.8	55.1	11.8		68.8
330		0.2	1.4			1.6
340						
TOTAL		6.5	207.8	65.5	0.9	280.7

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB 1000

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300			1.1	1.1		2.2
310		0.2	7.2	4.6	0.2	12.2
320		0.2	2.7	1.9		4.8
330						
340						
TOTAL		0.3	11.0	7.6	0.2	19.2

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB 1500

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300				0.8		0.8
310			0.6	0.2		0.8
320						
330						
340						
TOTAL			0.6	1.0		1.6

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB 2000

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300						
310				0.4		0.4
320						
330						
340						
TOTAL				0.4		0.4

TIME(MINUTES) FOR RPM VS TORQUE BY CLIMB 2500

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS						
300						
310			0.1			0.1
320			0.1			0.1
330						
340						
TOTAL			0.2			0.2

TABLE XXXVI

TIME(MINUTES) FOR RPM VS TORQUE, COMPOSITE

	LESS	10.0	20.0	30.0	40.0	TOTAL
LESS	0.1	0.3	4.8	0.8		5.9
300	0.6	38.4	612.5	44.1	0.9	696.5
310	4.7	352.6	5103.5	824.5	4.9	6290.2
320	3.8	221.9	2314.0	226.4	0.8	2767.0
330		8.1	35.3			43.4
340						
TOTAL	9.1	621.3	8070.1	1095.8	6.7	9802.9

APPENDIX II

TABLE XXXVII
PARAMETER LIMITS

Parameter	Code	Range
Rotor RPM	Less	Below 300
	300	300 to 310
	310	310 to 320
	320	320 to 330
	330	330 to 340
	340	Above 340
Altitude (ft)	Less	Below 1,000
	1,000	1,000 to 2,000
	2,000	2,000 to 5,000
	5,000	5,000 to 10,000
	10,000	10,000 to 15,000
	15,000	Above 15,000
Weight (lb)	Less	Below 5,000
	5,000	5,000 to 6,000
	6,000	6,000 to 7,000
	7,000	7,000 to 8,000
	8,000	Above 8,000
Rate of Climb (ft/min)	Less	Below -2,500
	-2,500	-2,500 to -2,000
	-2,000	-2,000 to -1,500
	-1,500	-1,500 to -1,000
	-1,000	-1,000 to -500
	-500	-500 to 500
	500	500 to 1,000
	1,000	1,000 to 1,500
	1,500	1,500 to 2,000
	2,000	2,000 to 2,500
	2,500	Above 2,500
C_T/σ Thrust Coefficient	Less	Below 0.06
	0.06	0.06 to 0.09
	0.09	0.09 to 0.12
	0.12	0.12 to 0.15
	0.15	Above 0.15
Airspeed (kn)	Less	Below 40
	40	40 to 60
	60	60 to 65
	65	65 to 70
	70	70 to 75
	75	75 to 80
	80	80 to 85
	85	85 to 90
	90	90 to 95
	95	95 to 100
	100	100 to 105
	105	105 to 110
	110	110 to 115
	115	115 to 120
	120	Above 120
μ Tip Speed Ratio	Less	Below 0.00
	0.00	0.00 to 0.05
	0.05	0.05 to 0.10
	0.10	0.10 to 0.15
	0.15	0.15 to 0.20
	0.20	0.20 to 0.25
	0.25	0.25 to 0.30
	0.30	Above 0.30

TABLE XXXVII, contd.

Outside Air Temperature (°F)	Less	Below 0
	0	0 to 10
	10	10 to 20
	20	20 to 30
	30	30 to 40
	40	40 to 50
	50	50 to 60
	60	60 to 70
	70	70 to 80
	80	80 to 90
	90	Above 90
Collective and Cyclic Stick Steady (pct)	Less	Below 10
	10	10 to 20
	20	20 to 30
	30	30 to 40
	40	40 to 50
	50	50 to 60
	60	60 to 70
	70	70 to 80
	80	80 to 90
	90	Above 90
Collective and Cyclic Stick Peaks (pct)	Less	Below -40
	-40	-40 to -30
	-30	-30 to -20
	-20	-20 to -10
	-10	-10 to 10
	10	10 to 20
	20	20 to 30
	30	30 to 40
	40	Above 40
Airspeed Acceleration (ft/min)	Less	Below -15
	-15	-15 to -12
	-12	-12 to -9
	-9	-9 to -6
	-6	-6 to -3
	-3	-3 to 3
	3	3 to 6
	6	6 to 9
	9	9 to 12
	12	12 to 15
	15	Above 15
Torque (lb/in^2)	Less	Below 10
	10	10 to 20
	20	20 to 30
	30	30 to 40
	40	Above 40
Gust n_z and Maneuver n_z (g)	Less	Below 0.2
	0.2	0.2 to 0.4
	0.4	0.4 to 0.5
	0.5	0.5 to 0.6
	0.6	0.6 to 0.7
	0.7	0.7 to 0.8
	0.8	0.8 to 1.2
	1.2	1.2 to 1.3
	1.3	1.3 to 1.4
	1.4	1.4 to 1.5
	1.5	1.5 to 1.6
	1.6	1.6 to 1.7
	1.7	1.7 to 1.8
	1.8	1.8 to 2.0
	2.0	2.0 to 2.2
	2.2	2.2 to 2.4
	2.4	Above 2.4

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13. ABSTRACT

A 219-hour statistical sample of data was collected from four UH-1B helicopters performing normal field mission assignments covering a period of 3 months.

The parameters monitored were airspeed, altitude, outside air temperature, acceleration at the aircraft center of gravity, main rotor rpm, collective stick position, longitudinal cyclic stick position, and engine torque. Supplementary information for each flight included barometric pressure, type of mission, and aircraft gross weight.

The data are presented as frequency-of-occurrence histograms, exceedance curves, and gust spectra. These figures and curves may be used for establishment of design criteria for new helicopters and for modification of design criteria for existing aircraft.

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